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May 1, 2025

Ms. Karen Shook, Secretary
Arkansas Public Service Commission
P.O. Box 400
1000 Center Street
Little Rock, Arkansas 72201

Re: Docket No. 07-085-TF
In the Matter of the Application of Entergy Arkansas, Inc. For Approval of Energy Efficiency Programs and Energy Efficiency Cost Rate Rider

Dear Ms. Shook:

Please find attached for filing with the Arkansas Public Service Commission, Entergy Arkansas, LLC's Energy Efficiency Program Portfolio Annual Report for the 2024 Program Year and the accompanying Program Portfolio Annual Report Excel Workbook. This Annual Report and Workbook are filed pursuant to the provisions of Section 9 of the Commission's Rules for Conservation and Energy Efficiency Programs approved in Docket No. 06-004-R.

If you have any questions or need anything additional concerning this filing, please call me at (501) 377-3571 or Amanda Hodge at (501) 377-4455.

Sincerely,

/s/ J. David Palmer

JDP/ah
Attachments

c: All eligible parties of record w/ attachments

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ENTERGY ARKANSAS, LLC

Arkansas Energy Efficiency

Program Portfolio Annual Report

Docket No. 07-085-TF

2024 PROGRAM YEAR

May 1, 2025

1

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1.0 Executive Summary

Entergy Arkansas, LLC ("Entergy Arkansas," "EAL," or the "Company") submits its Energy Efficiency Program Annual Report for the 2024 program year ("Annual Report"). This Annual Report demonstrates that the Company has developed and offered cost-effective energy efficiency ("EE") programs to all classes of its customers, as it has since the Arkansas Public Service Commission ("APSC" or the "Commission") adopted its Rules for Conservation and Energy Efficiency Programs ("C&EE Rules") and comprehensiveness guidance. The 2024 Annual Report provides information for the 2024 program year.

Overall, the Annual Report demonstrates:

- Entergy Arkansas' successful implementation of its energy efficiency programs continued for the 2024 program year, with the Company maintaining its overall energy efficiency savings through its portfolio of energy efficiency programs;
- Energy savings of 261,799 MWh (gross or *ex ante*[1]) for the 2024 program year, which is slightly less than the 294,537 MWh energy savings achieved by the Company for the 2023 program year;[2]
- Entergy Arkansas achieved net savings[3] of 251,696 MWh which is, by plan, slightly less than the 283,028 MWh achieved in 2023. The difference is mostly due to a larger deduction of sales associated with Self Direct ("SD") accounts from Entergy Arkansas' savings target, as well as adjustments to planning criteria. These savings were achieved by effectively working with program implementers and the evaluation contractor to expand offerings to low-income households and identify deeper savings for commercial customers. The overall portfolio net-to-gross factor decreased from 99 percent in 2023 to 97 percent in 2024;
- The 2024 program year was designed to achieve 120 percent of the Commission-established target for achieved savings of 1.2 percent of 2022 retail sales. Entergy Arkansas exceeded that goal with an overall achievement of 126 percent of the

[1] For purposes of this Annual Report, Entergy Arkansas uses the term "*ex ante"* to refer to the actual savings achieved by Entergy Arkansas prior to application of a number of adjustments that are applied to the Company's achieved savings figures.

[2] *See infra* Table 1.1.2 for additional details regarding the figures for this and other program years

[3] Net savings refers to the application of the Evaluation, Measurement and Verification ("EM&V") researched net-to-gross ratio to *ex post* savings.

Commission-established goal, which allows the programs to meet the performance incentive thresholds established by the Commission in Docket No. 13-002-U; and

- Entergy Arkansas' energy efficiency programs continue to receive national recognition. Below are the latest awards being issued to various programs:
    - Low Income Solutions – Alliance to Save Energy's Utilities Star of Energy Efficiency 2024;
    - Manufactured Homes – American Council for an Energy-Efficient Economy ("ACEEE") Exemplary Program 2019;
    - Agricultural Energy Solutions – ACEEE Exemplary Program 2019;
    - Residential Lighting & Appliances – U.S. Environmental Protection Agency ("EPA") ENERGY STAR® Partner of the Year Award 2019-2024;
    - Central and South U.S. Region Energy Project of the Year – Association of Energy Engineers 2024; and
    - Large Commercial & Industrial Solutions – ACEEE Exemplary Program 2024

In prior annual reports, Entergy Arkansas discussed the challenges inherent in running energy efficiency programs. In 2024, several steps were taken to overcome current challenges, while also exploring new avenues to lower the barriers facing customer adoption of the measures offered through the Company's energy efficiency programs. Those steps are enumerated below:

- Non-Energy Benefits ("NEBs");
    - 2024 saw the continued application of NEBs, pursuant to Order Nos. 7 and 30 in Docket No. 13-002-U; and
    - Entergy Arkansas, in collaboration with the Parties Working Collaboratively ("PWC") and its evaluator, Tetra Tech, refined the presentation and application of NEBs in 2018 through a NEBs working group. The NEBs working group established consensus definitions, methodologies and protocols for the identification and calculation of avoided and deferred replacement costs across the Company's portfolio, including processes for efficiently identifying, estimating and/or verifying avoided or deferred replacement costs associated with custom projects. These protocols were followed for estimating the 2024 program year NEBs.

- Consistent Weatherization Act and Act 1102;
    - Order No. 7 in Docket No.13-002-U requires all investor-owned utilities ("IOUs") to implement a consistent approach to providing weatherization services to eligible Arkansas residents. Order No. 7 identified key programmatic features that this consistent weatherization approach must include, features that were further developed and refined into a recommended framework – referred to as the Core Program – for implementation by the IOUs. The APSC approved the Consistent Weatherization Approach on December 9, 2014, with Order No. 22 in Docket No. 13-002-U. Beginning in 2016 and continuing through 2024, Entergy Arkansas' Home Energy Solutions, Manufactured Homes, Multifamily Homes and Low-Income Solutions programs offered the "core" weatherization measures to residential customers;
    - Act 1102 of 2017, concerning Ark. Code Ann. § 23-3-405(a) and the authority of the APSC over energy efficiency programs and measures provided by IOUs, states that the APSC is "permitted to order, require, promote, or engage in energy conservation programs and measures for the benefit of utility customers" that fall into one or both of two key segments:

        1. Utility customers who are 65 years of age or older, or
        2. Utility customers who meet the income eligibility qualifications for the Low-Income Home Energy Assistance Program ("LIHEAP") (now administered by the Arkansas Energy Office).

      Entergy Arkansas began offering a Low-Income Program in 2020 in accordance with Act 1102 guidelines; and
    - The Program Year ("PY") 2020 process evaluation found the new Low-Income Solutions successful, a finding that was similarly supported from a process evaluation in PY2023. The program effectively served the intended customers with approximately 85% of customers LIHEAP eligible[4] and/or 65 years of age or older in PY2024.

[4] Combining data collected on household size and household income, the EM&V team generated an estimate of the number and share of survey respondents that were eligible for assistance under LIHEAP. The EM&V team utilized a table of LIHEAP eligibility cutoffs provided by the State of Arkansas, where LIHEAP eligibility is determined through a combination of household size and household income.

- In addition to the Low-Income Solutions program, other Entergy Arkansas residential programs also serve the Arkansas low-income and senior population. The Home Energy Solutions ("HES") , Manufactured Homes and Multifamily Homes are the other primary programs providing services to these customer segments. Across these three programs between 30.8 percent and 36.4 percent of participants are 65 or older (30.8 percent of Multi-family homes participants, 33.8 percent of HES participants, and 36.4 percent of Manufactured Homes participants). More than 70 percent of HES participants are LIHEAP eligible, while about half of Manufactured Homes and Multifamily Homes participants are LIHEAP eligible (46.4 percent of Manufactured Homes participants, 50.0 percent of Multi-family Homes participants). With a total of 12,961 unique participants enrolled, the four residential programs installed 26,100 energy-saving units. While the programs addressed multiple end-uses including, heating, ventilation and air conditioning ("HVAC"), hot water, envelope and appliances, weatherization improvements continue to be one of the most popular measures, with duct sealing representing over half of savings in each of the four programs, and ceiling insulation and air infiltration representing the next most energy saving measures;

- Common Commercial and Industrial ("C&I") Approach; and
    - On June 8, 2015, the Commission, in Order No. 27 in Docket No. 13-002-U, approved the Common C&I Approach. This order directed the utilities to report on the performance of the Common C&I approach within their respective annual reports as data becomes available.

- Evolving Retail Light-emitting diode ("LED") Lighting Market and Regulatory Uncertainties

    In 2023, the Energy Independence and Security Act ("EISA") continued to drive policy updates for General Service Lamps ("GSLs"). Implementation of these updates phased in throughout the year, prompting ongoing incentives for GSLs which ended in June 2023. The Department of Energy ("DOE") initiated a Notice of Proposed Rulemaking on December 13, 2021 to establish a "backstop" efficacy requirement of 45 lumens per watt for GSLs. This implementation led to a significant market transformation across major bulb shapes, including A-Line, Candle, Globe, and Reflector bulbs. The rulemaking process was completed in 2022, with the DOE issuing two final rules related to GSLs. One rule updated the

definitions of GSLs and General Service Incandescent Lamps, while the second rule set the energy efficiency standard for GSLs to the aforementioned 45 lumens per watt requirement. Although the final rules came into effect in 2022, full compliance was phased in over the course of 2023. The impacts of the new baseline, which was recognized in PY2024, had a significant decrease on EAL's portfolio savings, particularly the residential programs' savings as projected by EM&V team.

1.1 2024 Program Results and Achievements

For the 2024 program year, Entergy Arkansas achieved 80.4 MW[5] of evaluated net demand reduction and 251,696 MWh of evaluated net energy savings.

In accordance with Order No. 17 in Docket No. 10-100-R, Entergy Arkansas' portfolio summary information, after independent EM&V and other adjustments are applied, is shown in Table 1.1.1:

Table 1.1.1

Portfolio Summary of 2024 Entergy Arkansas' Energy Efficiency Program Results[6]

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 (%)
80	251,696	$ 58,231,942	$ -	$ 4,888,139	$ 48,881,386	1.86	1.76	1.20%	1.51%	126%

[5] Energy savings and demand reduction do not include line losses as calculated by Tetra Tech.

[6] Demand and energy values do not include transmission and distribution line losses.

Applying the required adjustments to these savings estimates for the PY 2024, and comparing those net figures to Entergy Arkansas' targets (as adjusted to account for the loss of SD" customers), the Company achieved 126 percent of its savings target established by the Commission, as reflected in Table 1.1.2 below:

Table 1.1.2

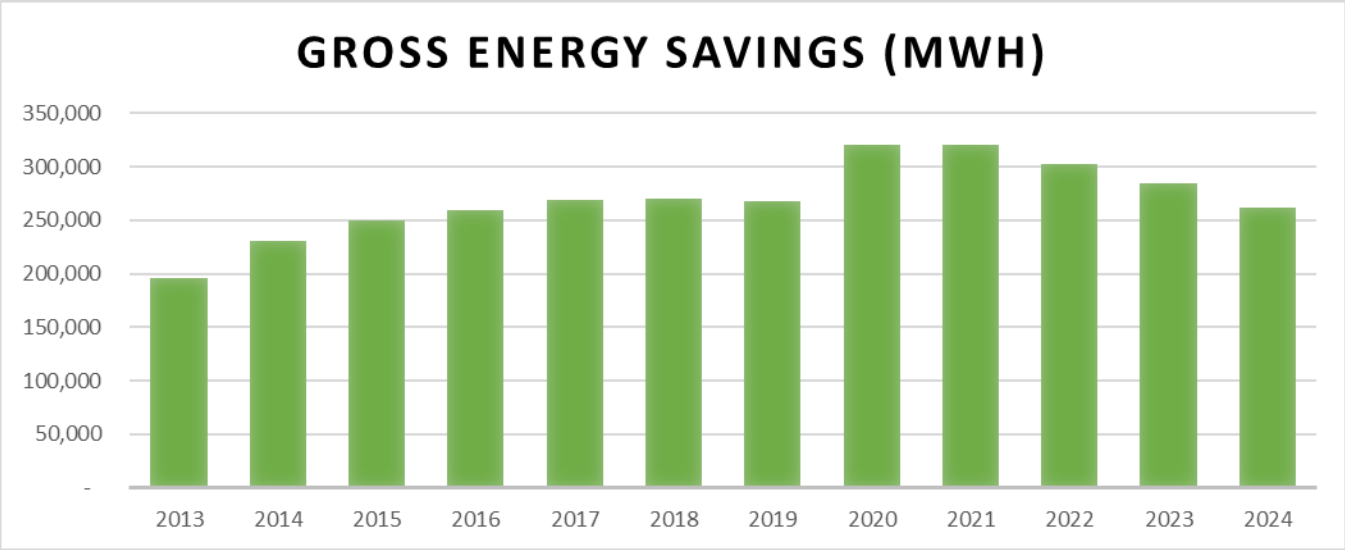
Evaluated Savings and Goal Achievement

Entergy Arkansas' Gross Savings (*ex ante*)	**261,799 MWh[7]**
As adjusted for Realization Rate (*ex post*)	**260,000 MWh**
As adjusted for Net-To-Gross ("NTG") ratios	**251,696 MWh**
Entergy Arkansas MWh Target adjusted for SD	**200,195 MWh**
% of Target Achievement Based on Evaluated Energy Savings	**126%**

The Commission's initiatives have fostered significant growth in energy efficiency, as reflected in the unadjusted savings that Entergy Arkansas has realized for the program years 2014-2024. These initiatives have helped increase energy efficiency savings by approximately 113 percent over that 10-year time period.

[7] Unadjusted figures provide a good basis for comparing growth of Entergy Arkansas' Energy Efficiency programs because that was the basis upon which the IOUs were required to report their energy efficiency savings prior to the Annual Report for the 2011 Program Year filed April 2012.

Table 1.1.3 – Gross Energy Savings



For PY 2024 , there were differences, as is normally the case, between budgeted and actual expenditures. These differences can be attributed to the following factors:

- The largest program in Entergy Arkansas' portfolio is the Large C&I Solutions Program, which also serves the class of the Company's customers who are eligible to SD their energy efficiency efforts and opt out of the utility programs. This program is affected the most with respect to energy savings achievement because of the loss in the number and respective energy usage of the customers obtaining SD exemptions. In 2024, Entergy Arkansas customer accounts approved to opt out of the programs remained consistent to that of 2023. The sales to SD customers represent approximately 21 percent of Entergy Arkansas' total retail sales. Additionally, approximately 49 percent of C&I customers eligible to SD have done so, representing approximately 51 percent of MWh sales eligible to be exempted. These SD exemptions continue to have a negative impact upon the Large C&I Program's ability to meet targeted energy savings goals. Recognizing this difficulty, the Large C&I Program has focused on increasing the number of energy efficiency projects from smaller C&I customers, while continuing to reach the remaining large industrial customers in the program through account management and trade ally efforts.

- In general, the Company's energy efficiency portfolio benefited from economies of scale

realized in the PY 2024 . As discussed throughout this Annual Report, Entergy Arkansas continually works to evaluate its programs and implementation plans to determine whether improvements can be made. Over the years, numerous innovations to program deliveries have been implemented, the results of which are now being realized. Programs are operating more efficiently in many respects, as evidenced by customers implementing multiple measures through their participation in programs.

As was mentioned earlier, all of Entergy Arkansas' energy efficiency programs were cost-effective on a Total Resource Cost ("TRC") basis in 2024, except the demand response programs which include the Agricultural Irrigation Load Control, Smart Direct Load Control, and Residential Direct Load Control programs. Further explanation of these results, including how Entergy Arkansas intends to manage these programs, will be addressed herein.

1.2 Entergy Arkansas' 2024 Program Year Results and 2024 Program Changes and Goals

With another full year of information available regarding implementation of Entergy Arkansas' comprehensive programs from its three-year plan approved by the Commission, the Company achieved a significant amount of demand and energy savings. The Company's overall results for PY 2024 are shown in Table 1.2.1 below:

Table 1.2.1

Entergy Arkansas 2024 Results

Entergy Arkansas' Gross Savings (ex ante)	261,799 MWh
As adjusted by Tetra Tech for Realization Rate ("RR" or *ex post*)	260,000 MWh
As adjusted for Net-To-Gross and RR ratios[8]	251,696 MWh

Tetra Tech's Evaluation Report recognized Entergy Arkansas' continued success in its PY 2024 program year report and EM&V processes, stating:

> Evaluation results are positive with EAL and its implementers, demonstrating continuous improvement in its program design and delivery processes, tracking

[8] Energy savings do not include transmission and distribution line losses.

system, documentation, and savings tools. Evidence of this continuous improvement is a high portfolio-level NTG ratio of 97 percent and an overall realization rate of 99 percent across all programs.

Both EAL and its implementation contractors continue to be responsive to evaluation recommendations and collaborated with the EM&V contractor throughout 2024. Continued technical assistance and collaboration between EAL, its program implementers, and the EM&V team supported the programs and facilitated high gross savings realization rates. The PY2024 evaluation effort identified additional recommendations to continue to stabilize realization rates in subsequent program years; increase the transparency, accuracy, and evaluability of program savings in the future; and develop process improvements to further program performance and satisfaction. EAL's status in completing program recommendations from the BY2023 evaluation are documented in each program-specific section. Prior evaluations identified a misalignment between energy savings and demand reduction goals; PY2024 results indicate EAL worked with implementers to reassess energy and demand savings goals, with the PY2024 portfolio achieving 91 percent of demand savings goal. During the previous program cycle and bridge year, the portfolio achieved between 55 and 64 percent of demand savings goals annually.

The EM&V team calculates net-to-gross for all residential and C&I programs (outside of demand response, which are deemed from industry standard) at least once over the course of the program cycle. Net-to-gross remains strong across all programs with the majority of saving directly attributable to its portfolio energy goals, achieving more than 99 percent of its filed goal. Entergy Arkansas was slightly below its demand goals, meeting 91 percent of the demand goal; however, the performance difference between energy savings and demand goals is greatly improved compared to prior years, indicating a strategic realignment of resources from implementers and the EAL team.

Overall, evaluated savings were close to matching claimed energy savings with an overall portfolio gross realization rate of 99% for energy savings and 97% for demand reductions. Program-level gross realization rates ranged from 97% to 101% for energy savings and 75% to 104% for demand savings. NTG remains

strong across all programs, with most savings directly attributable to the programs and an overall portfolio NTG ratio of 97 percent, a slight decrease from last year's 99 percent. While the Point of Purchase Solutions and Smart Direct Load Control pilot had NTG ratios between 85 and 90 percent, all other programs had NTG ratios between 99 percent and 101 percent, with the Large Commercial and Industrial Solutions program at 101 percent.

Individual program performance relative to program savings and demand goals varied. Six of the ten programs[9] achieved or exceeded their megawatt-hour savings goals. Four programs did not reach their energy savings goals; these six programs ranged between 51 percent and 97 percent of energy savings goals. Three of twelve programs achieved their megawatt goals; three programs met 90 percent or more of the demand savings goal; and six met less than 90 percent of the demand savings goal. The performance of EAL's overall portfolio achieved 99 percent of goal savings.

The Smart Direct Load Control pilot improved on previous years' performances, meeting 76 percent of its energy savings and 49 percent of its demand reduction goals. Residential program performance against the energy savings goal was stronger, with Energy Solutions for Manufactured Homes achieving 90 percent and Low-Income Solutions meeting 97 percent of savings goal; all remaining residential programs exceeded energy savings goals. In the commercial sector, both the Large Commercial and Industrial and Public Institutions Solutions Offering programs exceeded their savings goal at 101 percent and 104 percent, respectively, while Small Business Solutions achieved 51 percent of goal savings. This is an improvement from BY2023 when no commercial programs met their savings goals. The Residential Direct Load Control program achieved the highest demand savings relative to goal, exceeding goal savings by 30 percentage points.

As discussed earlier, the SD option continues to influence Entergy Arkansas' ability to achieve savings with C&I customers. In 2024, there were 584 accounts that had been approved by the Commission to "opt out" of the Entergy Arkansas energy efficiency programs.

[9] Residential Direct Load Control and Agricultural Irrigation Load Control programs had no megawatt-hour savings goals.

Accordingly, for 2024, the overall targets were reduced by 24.3 percent as a result of the SD accounts, an increase of 34 percent from one year prior. Based upon Entergy Arkansas' assessment, and to preserve its ability to meet 2024 C&I program goals, Entergy Arkansas made minor adjustments to the C&I energy efficiency program budgets and the energy savings reductions for 2024.[10] Entergy Arkansas' 2024-2026 Energy Efficiency Plan forecasts higher participation in the upstream and midstream offerings for smaller commercial customers and an expanded measure mix to address the higher costs of C&I projects. The 2024 goals and the associated adjustments are shown in Table 1.2.2.

Table 1.2.2
Entergy Arkansas' 2024 Energy Savings Goals

Original 2024 Goal (MWh)	264,337
Adjustment due to SD (MWh)	64,142
New 2024 Goal (MWh)	200,195

Entergy Arkansas made changes to the commercial programs in 2024 based upon:

1) the number and magnitude of 2024 SD applications and approvals;[11]
2) the independent evaluation results; and
3) the impact of changes to lighting standards in the Arkansas markets.

The gross savings for all programs reported in this document were calculated using the Arkansas TRM 9.2 Deemed Savings and Protocols as adjusted by the Joint Recommendations of the Independent Evaluation Monitor and the PWC and approved by the Commission,[12] or where appropriate, utilizing an International Performance Measurement & Verification Protocol approved method.

As indicated earlier, Entergy Arkansas' reported net savings reflect the final results of the independent EM&V analysis performed by Tetra Tech. Tetra Tech's EM&V Report of Entergy Arkansas' PY 2024 Energy Efficiency programs is attached as Appendix A.

[10] Entergy Arkansas will need to continue to monitor SD impacts as a result of the SD Legislation passed and implemented in 2013.
[11] Legislation has increased the uncertainties regarding the magnitude of industrial customers that will choose to SD.
[12] Docket No. 10-100-R, Order No. 42 at 2. (October 18, 2023)

1.3 Cost Benefit Results

Entergy Arkansas performed a cost-benefit analysis in connection with the 2024 results, using the same modeling approaches that were used in prior annual reports and using the fixed avoided costs from the 2024-2026 program plan, in accordance with Order No. 7 in Docket No. 13-002-U,[13] as well as accounting for any reasonably quantifiable NEBs. The results of these analyses are included in Table 1.3:

Table 1.3
Entergy Arkansas' 2024 Cost-Effectiveness Results

Including NEBs	Total Resource Cost (TRC)		TRC Levelized Cost	Participant Cost Test (PCT)		Ratepayer Impact Measure (RIM)		Program Administrator Cost (PAC)	
Program	NPV ($000's)	Ratio	$ / kWh	NPV ($000's)	Ratio	NPV ($000's)	Ratio	NPV ($000's)	Ratio
Home Energy Solutions	$ 13,157	2.2	$ 0.03	$ 33,080	4.5	$ (28,038)	0.4	$ 9,109	1.8
Multifamily Homes	$ 3,370	2.6	$ 0.02	$ 11,370	9.7	$ (9,614)	0.4	$ 3,130	2.5
Manufactured Homes	$ 1,608	2.5	$ 0.02	$ 5,549	9.9	$ (4,802)	0.3	$ 1,466	2.4
Low Income Solutions	$ 2,492	1.7	$ 0.04	$ 9,188	5.1	$ (9,017)	0.4	$ 1,333	1.4
Point of Purchase Solutions	$ 14,337	2.7	$ 0.02	$ 57,219	8.6	$ (41,205)	0.4	$ 14,981	3.1
Commercial & Industrial	$ 13,188	1.9	$ 0.03	$ 27,298	3.8	$ (15,526)	0.6	$ 12,719	1.9
Small Business	$ 3,073	2.4	$ 0.02	$ 9,540	6.9	$ (7,256)	0.4	$ 2,585	2.4
Public Institution Solutions	$ 3,206	1.8	$ 0.03	$ 4,840	2.4	$ (2,499)	0.7	$ 4,441	3.2
Agriculture Energy Solutions	$ 1,126	2.3	$ 0.02	$ 2,651	14.0	$ (1,496)	0.6	$ 814	1.7
Smart Direct Load Control Pilot	$ (1,505)	0.5	$ 0.09	$ 4,938	n/a	$ (6,510)	0.1	$ (3,318)	0.3
Direct Load Control	$ (1,866)	0.0	$ 122.68	$ 397	n/a	$ (2,263)	0.0	$ (2,263)	0.0
Agriculture Irrigation Load Control	$ (3,094)	0.0	$ 151.44	$ 407	n/a	$ (3,501)	0.0	$ (3,501)	0.0
0	$ -	n/a	n/a	n/a	n/a	$ -	n/a	$ -	n/a
Portfolio	$ 49,093	1.9	$ 0.03	$166,476	5.6	$ (131,727)	0.4	$ 41,495	1.76

Note: Total Portfolio for the PCT Test does not equal sum of the programs because the PCT uses a discount rate based on customer class.

As can be seen from Table 1.3, all of Entergy Arkansas' programs are cost-effective, except for the demand response programs. As anticipated in the 2024-2026 EE Plan Filing testimony,[14] the Agricultural Irrigation Load Control ("AILC"), Smart Direct Load Control Pilot, and Residential Direct Load Control ("RES DLC") Programs were not cost effective. However, Entergy Arkansas currently has approximately 12,944 total installed end points for residential customers enrolled in the RES DLC program that provide capacity in the Midcontinent Independent Service Operator, Inc. ("MISO") for this program, as does the AILC program with 1,605 participants. Further, Entergy Arkansas has invested substantially in the success of these programs and expects that, under the APSC's methodology, they could be cost effective in the future. However, as noted in Entergy Arkansas' Plan for 2024-2026 filed in Docket No. 07-085-TF on

[13] Entergy Arkansas' cost-benefit analysis method involves an in-depth analysis of the hours (e.g., on peak vs. off peak) in which the expected energy savings likely would be realized.
[14] Docket No. 07-085-TF, Blankenship Direct Testimony at 14-15 (Document 799 filed August 1, 2023).

August 1, 2023, Entergy Arkansas is planning to phase out the Res DLC program in the coming years.

The overall cost-effectiveness for the portfolio is primarily due to two reasons. First, the 2024 program year was planned considering the directives set forth by the Commission in Order No. 7 of Docket No. 13-002-U, including the use of the Real Economic Carrying Charge Method ("RECC") and MISO market value to estimate the avoided energy and capacity costs. The 2024 achieved results are evaluated based upon the directives in Order No. 187 in Docket No. 07-085-TF and Order No. 107 in Docket No. 13-002-U for the Three-Year Plan filing for the years 2024-2026. In addition, Entergy Arkansas included NEBs in the TRC test, as approved in the TRM v9.2. The NEBs had a Net Present Value of approximately $9.7M in the 2024 TRC. Compared to the TRC without NEBs, this was an increase of approximately 19.8 percent of the total Net Present Value in the portfolio's TRC.

1.4 2024 Budgets and Changes

The PY 2024 program year budget was originally approved by the Commission in Order No. 187 of Docket No. 07-085-TF, as part of the 2024-2026 Energy Efficiency Program Plan with an overall portfolio cost of $73,679,987. In 2024, Entergy Arkansas revised the approved budget within the Commission's budget flexibility guidelines and transferred budgeted dollars from underachieving programs to programs seeing more positive market acceptance. The details of the revised budget are provided in Table 1.4. No program had more than 10 percent of its budget reduced, and the total portfolio budget remained within the 10 percent limit.

Table 1.4

Revised 2024 Budgets[15]

	Program Name	Revised Budget*	Initial Budget	Difference	Change	Explanation for the Change
1.	Home Energy Solutions	$15,266,394	$ 15,266,394	$0	0%	N/A
2.	Multifamily Homes	$2,808,661	$ 2,808,661	$0	0%	N/A
3.	Manufactured Homes	$1,426,036	$ 1,426,036	$0	0%	N/A
4.	Low-Income Solutions	$5,384,249	$ 5,384,249	$0	0%	N/A
5.	Point of Purchase Solutions	$9,360,026	$ 8,751,342	$608,684	7%	Administrative dollars were shifted into this program to cover overdrive.
6.	Large Commercial & Industrial Solutions	$18,606,075	$ 19,010,281	-$404,207	-2%	Administrative dollars were shifted out of this program to cover overdrive in the Point of Purchase Solutions program.
7.	Small Business Solutions	$4,040,749	$ 4,172,561	-$131,813	-3%	Administrative dollars were shifted out of this program to cover overdrive in the Point of Purchase Solutions program.
8.	Public Institutions Solutions	$2,892,032	$ 2,964,697	-$72,665	-2%	Administrative dollars were shifted out of this program to cover overdrive in the Point of Purchase Solutions program.
9.	Agricultural Energy Solutions	$2,121,871	$ 2,121,871	$0	0%	N/A
10.	Residential Direct Load Control	$2,698,350	$ 2,698,350	$0	0%	N/A
11.	Smart Direct Load Control Pilot	$5,311,366	$ 5,311,366	$0	0%	N/A
12.	Agricultural Irrigation Load Control	$3,764,179	$ 3,764,179	$0	0%	N/A
13.	Empty	$0	$ -	$0	-	N/A
	Regulatory	$ -	$ -	$ -	-	N/A
	Total Portfolio:	**$ 73,679,987**	**$ 73,679,987**	**$ (0)**	**0%**	NA

Order # 187 approved the Initial Budget.

1.5 Planned Program Modifications for the 2025 Program Year

Entergy Arkansas continues to seek to achieve efficiencies and improve upon the various energy efficiency programs that it offers to its customers. Numerous examples of these efforts are discussed in the specific program descriptions contained herein.

Entergy Arkansas proposed its three-year 2024-2026 Program Plan ("Plan") in Docket No. 07-085-TF on August 1, 2023, which was approved by the Commission in Order No. 187 on November 9, 2024. Although the 2024-2026 program structures remain unchanged from the previous Plan, the enactment of multiple federal efficiency standards across the lighting and HVAC markets requires programs to adopt new measures to achieve savings in the most cost-effective manner.

The following three tables are from the tabular report workbook as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

- "EE Portfolio Expenditures by Program" from Workbook Table 2, Table 1.5.1 below

[15] The APSC approved the Budget in Order No. 187 in Docket No. 07-085-TF and Order No. 72 in Docket No. 13-002-U.

- "EE Portfolio Summary by Cost Type" from Workbook Table 3, Table 1.5.2 below
- "Company Statistics" from Workbook Table 4, Table 1.5.3 below

Table 1.5.1

EE Portfolio Summary Expenditures by Program

EE Portfolio Expenditures by Program

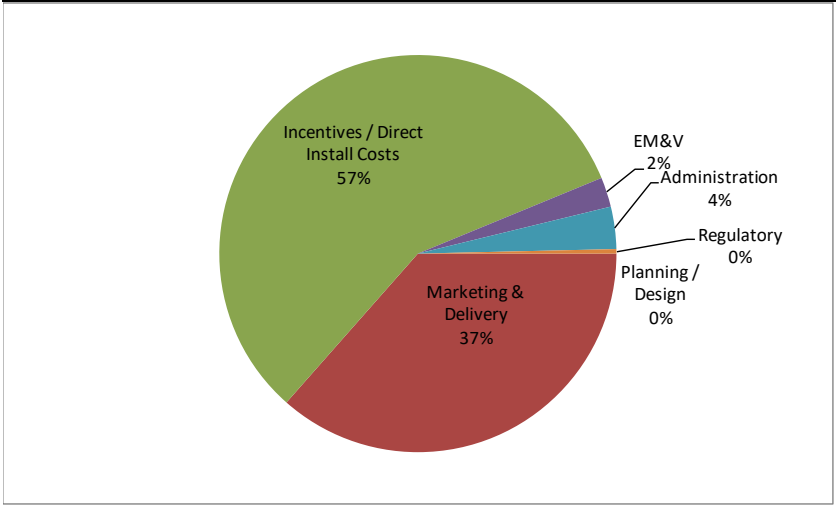
Program Name	Target Sector	Program Type	2024 Budget ($)	2024 Actual ($)	% of Budget
Home Energy Solutions	Residential	Whole Home	15,266,394	11,705,868	77%
Low-Income Solutions	Residential	Market Specific/Hard to Reach	5,384,249	3,691,225	69%
Manufactured Homes	Residential	Whole Home	1,426,036	1,144,709	80%
Multifamily Homes	Residential	Whole Home	2,808,661	2,282,537	81%
Residential Direct Load Control	Residential	Demand Response	2,698,350	2,372,588	88%
Small Business Solutions	Small Business	Market Specific/Hard to Reach	4,172,561	2,016,542	48%
Smart Direct Load Control Pilot	Res/Small Business	Demand Response	5,311,366	4,625,493	87%
Large Commercial & Industrial Solutions	Commercial & Industrial	Custom	19,010,281	15,068,047	79%
Public Institutions Solutions	Municipalities/Schools	Market Specific/Hard to Reach	2,964,697	2,269,903	77%
Agricultural Energy Solutions	Agriculture	Prescriptive/Standard Offer	2,121,871	1,286,225	61%
Agricultural Irrigation Load Control	Agriculture	Demand Response	3,764,179	3,669,706	97%
Point of Purchase Solutions	All Classes	Consumer Product Rebate	8,751,342	7,887,960	90%
Hide	-	-	-	-	-
Regulatory	-	-	-	211,139	-
		Total	**73,679,987**	**58,231,942**	**79%**

Table 1.5.2

EE Portfolio Expenditure Summary by Cost Type

EE Portfolio Expenditure Summary by Cost Type

Cost Type	2024 Total Expenditures % of Total	Budget ($)	Actual ($)	% of Total
Planning / Design	0%	300,000	-	0%
Marketing & Delivery	29%	21,572,355	21,259,853	37%
Incentives / Direct Install Costs	63%	46,327,632	33,350,254	57%
EM&V	3%	2,240,000	1,406,618	2%
Administration	4%	3,240,000	2,004,079	3%
Regulatory	0%	-	211,139	0%
	100%	**73,679,987**	**58,231,942**	100%



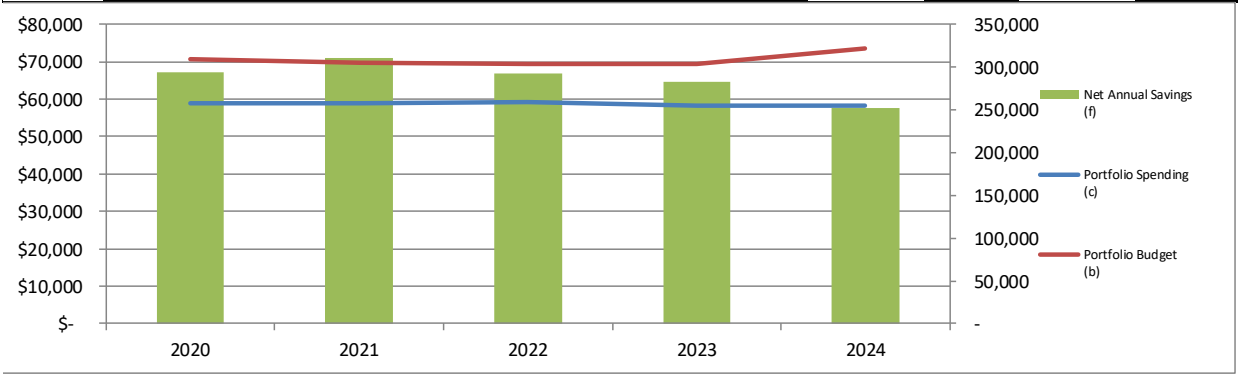
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Table 1.5.3

Company Statistics

Company Statistics

Program Year	Revenue and Expenditures						Energy				
		Budget		Actual				Plan		Evaluated	
	Total Revenue (a) ($000's)	Portfolio Budget (b) ($000's)	% of Revenue (%=b/a)	Portfolio Spending (c) ($000's)	% of Revenue (%=c/a)	Total Annual Energy Sales (d) (kWh)	Net Annual Savings (e) (kWh)	% of Energy Sales (%=e/d)	Net Annual Savings (f) (kWh)	% of Energy Sales (%=f/d)
2020	$ 1,787,352	$ 70,658	4.0%	$ 58,834	3.3%	20,748,190	285,557	1.38%	294,313	1.42%
2021	$ 1,878,947	$ 69,585	3.7%	$ 58,872	3.1%	22,281,461	285,765	1.28%	311,158	1.40%
2022	$ 2,056,565	$ 69,355	3.4%	$ 59,152	2.9%	22,326,106	285,149	1.28%	292,926	1.31%
2023	$ 2,236,945	$ 69,355	3.1%	$ 58,224	2.6%	22,518,603	285,149	1.27%	283,028	1.26%
2024	$ 2,221,981	$ 73,680	3.3%	$ 58,232	2.6%	22,518,603	253,490	1.13%	251,696	1.12%



While there were notable changes made in 2020 to create a more seamless customer experience, the Entergy Arkansas 2024-2026 Plan seeks to build on those experiences and learnings to increase the program efficiency and further evolve the customer journey. Continued adjustments to program measures are expected as federal lighting and appliance standards have taken effect. However, the general structure and markets served have remained unchanged from the previous Plan. The Energy Efficiency Arkansas education and workforce development program, previously administered by the Arkansas Energy Office and funded by the participating utilities, ended on December 31, 2023, pursuant to Order No. 65 of Docket No. 13-002-U .

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Table 1.5

Approved 2024-2026 Budgets

EAL Programs	Total Annual Budget ($1,000s)			
	2024	2025	2026	Total
Home Energy Solutions	$15,266	$15,249	$15,355	45,870
Energy Solutions for Multifamily Homes	$2,809	$2,857	$2,901	8,567
Energy Solutions for Manufactured Homes	$1,426	$1,421	$1,430	4,276
Low-Income Solutions	$5,384	$5,412	$5,482	16,278
Point of Purchase Solutions	$8,751	$8,741	$8,898	26,391
Large Commercial & Industrial Solutions	$19,010	$19,083	$19,432	57,526
Small Business Solutions	$4,173	$4,179	$4,230	12,582
Public Institutions Solutions	$2,965	$2,978	$3,028	8,971
Agricultural Energy Solutions	$2,122	$2,198	$2,275	6,594
Residential Direct Load Control	$5,311	$5,719	$6,079	17,109
Smart Direct Load Control Pilot	$2,698	$2,666	$2,634	7,999
Agricultural Irrigation Load Control	$3,764	$3,798	$3,946	11,508
Total	$73,680	$74,300	$75,691	223,671

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2.0 Portfolio Programs

2.1 Home Energy Solutions

2.1.1 Program Description

Home Energy Solutions ("HES") was designed to improve energy efficiency and benefit the owners and renters of single-family homes in Entergy Arkansas' service territory. The HES program helps homeowners achieve electricity savings by working with a participating trade ally, who will help residential customers analyze their energy usage, identify energy efficiency improvement projects and install no-cost, energy-saving measures at their home.

Design elements of HES include incentives to offset 100 percent of the cost of an energy evaluation provided by a certified trade ally. The first step to determine eligibility is accomplished by the trade ally completing a home energy assessment. During the home energy assessment, the trade ally completes a walk through inspection, visually identifying inefficiencies in the home's building envelope and current level of attic insulation, as well as identifying eligible direct install opportunities. The trade ally will secure customer permission to directly install equipment at the time of inspection (e.g. advanced power strips, high efficiency showerheads, kitchen and bathroom aerators for customers with electric water heating) and produce a written report based on the visual inspection.

The trade ally will also perform diagnostic testing, including a blower door and duct blaster tests, to provide the customer with estimated energy savings and a list of prioritized recommendations. In 2024, the program achieved its energy savings by providing incentivized energy saving measures such as ceiling insulation, air conditioner and heat pump tune-ups, and duct and air sealing measures to customers at no charge. These measures continue to make up the bulk of energy savings for the program. In addition, this program educates tenants and owners about the benefits of having energy saving measures installed on their property.

2.1.2 Program Highlights

- Saved 29,414 gross MWh in 2024 with a 99.5 percent realization rate and a net-to-gross ratio of 100 percent, resulting in 29,271 MWh net savings.
- Achieved 10 gross MW and 9.9 net MW savings in 2024 with a realization rate of 98.4 percent.
- Saw a total of 8,505 unique participants and 15,810 measures incentivized in 2024.

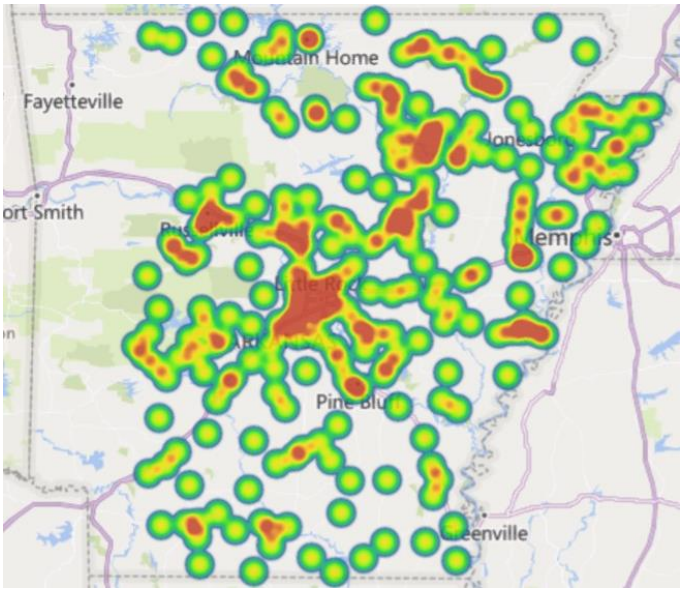
- In 2024, a Trade Ally Coordinator position was created to fill the role of a personal point of contact for all trade allies to better serve them in their individual needs and ensure consistency in communications. Each trade ally receives regular communications through email and telephone, and a bi-weekly electronic newsletter. Additionally, each month a video conference is held, offering opportunities for the trade allies to have a roundtable discussion on any current issues or concerns, and several trade allies make up the Trade Ally Council, which meets quarterly. Trade allies also receive a monthly email from each program they participate in with their current allocation status for the quarter, pipeline status, burn rate, and any outstanding quality assurance/quality control (QAQC)/flawed/complaint issues that need to be addressed. Through these enhancements there has been a noticeable increase in trade ally communications and satisfaction with their participation in the HES program.

- The HES program provided a wide variety of both live and virtual training sessions to educate trade allies on program requirements, measure installation best practices, and new tools, among others. In 2024, mandatory customer service training was also implemented for all trade ally employees. This training is provided in both online and in-person meetings, on an ad-hoc basis as needed.

- All technicians performing test-in and test-out on customer homes are required to hold one of several Building Performance Institute or RESNET energy professional certifications. Building Performance Institute's (BPI) BA_T training and testing is also provided annually through ICF to trade allies wishing to participate.

- The program continued to provide services throughout the Entergy Arkansas service territory. The geospatial map in Figure 2.1.2 shows the location of work performed in 2024.

Figure 2.1.2: 2024 Participants



- A total of 1,729 audits were completed: 1,402 Tier 1 and 328 Tier 2.
- Duct and air sealing projects totaled 7,930, of which 248 went through the program's virtual QA/QC process and 542 went through the program's field inspection QA/QC process.
- Of the 2,294 ceiling insulation projects, 59 went through the program's virtual QA/QC process and 249 went through the program's field QA/QC process.
- Tune-up projects totaled 3,537. Virtual QA/QC was done on 126 projects and 235 projects went through the program's field inspection QA/QC process.
- Direct install measures were installed on 859 projects, and of those, 50 went through the virtual QA/QC process and 41 projects went through the program's field inspection QA/QC process.

- Program account managers and trade allies educated customers about other energy efficiency measures that they could implement and other Entergy Arkansas energy efficiency programs available to them.
- Promotion and outreach activities were executed in a variety of marketing channels. Paid media with print, digital and social media tactics were very successful in driving awareness and engagement. Entergy Arkansas' marketing channels also were used to promote this program via social media posts, the Entergy Solutions web page, the Entergy Circuit newsletter and Entergy bill inserts. Trade ally co-branded marketing materials and referrals were also used to reach out to customers to increase awareness and participation. Program personnel attended several community events to promote the programs to Entergy Arkansas customers. These efforts helped implement the program across the entire Entergy Arkansas service territory.

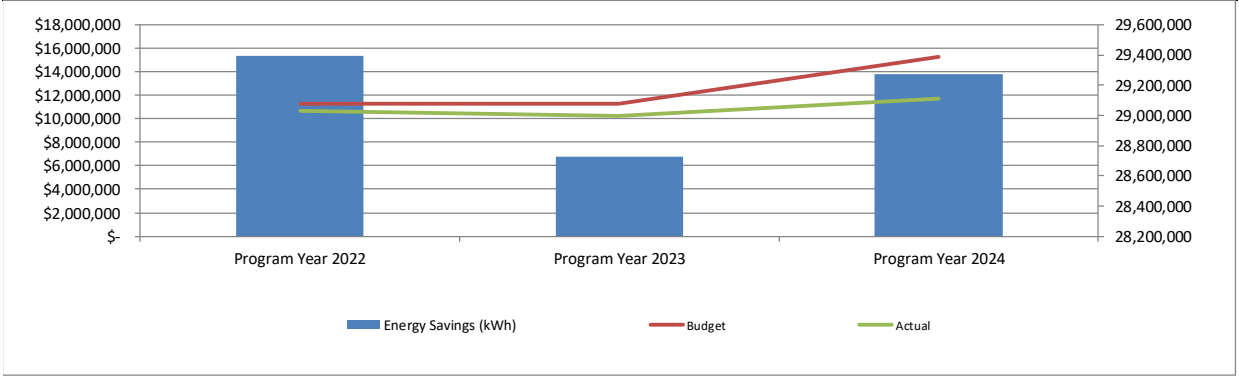
2.1.3 Program Budget, Savings and Participants

Table 2.1.3 shows the program budget, annual energy and demand savings and participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.1.3

Home Energy Solutions Program Budget, Energy Savings and Participants

Home Energy Solutions												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 11,303,430	$ 10,639,863	94%	27,136,500	29,392,834	108%	10,251	9,741	95%	8,773	7,369	84%
Program Year 2023	$ 11,303,430	$ 10,217,954	90%	27,136,500	28,724,746	106%	10,251	9,494	93%	8,773	7,437	85%
Program Year 2024	**$ 15,266,394**	**$ 11,705,868**	**77%**	**27,263,297**	**29,270,923**	**107%**	**9,071**	**9,881**	**109%**	**7,247**	**8,505**	**117%**



2.1.4 Description of Participants

All customers with an active Entergy Arkansas account who live in a single-family home are eligible to participate in the HES program. For the home to be eligible for weatherization measures, it must: 1.) Have a central ducted system with a working air conditioner and/or working electric heat AND 2.) Be at least 10 years old, OR have an energy use greater than or equal to $0.10 per square foot in the summer AND be at least one year old. Participants are counted on a per account basis.

Table 2.1.4, from the Entergy Arkansas, LLC Evaluation Report – Program Cycle 2024, highlights key demographic information for participants in the HES Program. Pertaining to Act 1102, approximately 34 percent of the HES participants were aged 65 or older and approximately 71 percent of the respondents were eligible for LIHEAP benefits.

Table 2.1.4 For Program Cycle 2024 Demographic Information from Process Surveys

Respondent characteristic		Percentage*	Participants16
Respondent age	25–34	9.9%	842
	35–44	16.9%	1,437
	45–54	22.5%	1,914
	55–64	16.9%	1,437
	65 or older	33.8%	2,874
	Participants (n)		**8,504**
LIHEAP status	LIHEAP-eligible	70.8%	6,021
	Not LIHEAP-eligible	29.2%	2,483
	Participants (n)		**8,504**

*Percentages are estimated from BY2024 process surveys.

*Participants may not sum to participant totals highlighted in bold due to rounding.

2.1.5 Program Challenges and Opportunities

Challenges:

With the removal of lighting as a measure in 2023, the HES program saw a significant decrease in the number of unique measures in 2024, though this decrease has not affected hitting the program's savings goals due to the increased focus on other measures.

While the rate of price increases has slowed compared to recent years, the cost of EE products, shipping, and labor continues to rise. To offset the cost increases for our trade ally network, the program increased rebate incentives for direct installation items, air and duct sealing improvements by 10 percent, and the third-tier insulation covering R9-R14 starting value by $0.10 per square foot.

Just as the U.S. Federal Trade Commission ("FTC") has reported the rise of impersonation scams across the U.S., trade allies for the Entergy Solutions Program were seeing first-hand customers' concerns regarding these types of scams. Some trade allies have experienced deep

[16] Participant count includes all participants reported in each program, including those that did not claim energy or demand savings such as duplicate smart thermostat measures claimed in the SDLC program, DI Labor Fee to track additional incentive for contractors without savings, and audit measures.

skepticism from customers and even the police being called to report them. To address this, we needed a way to:

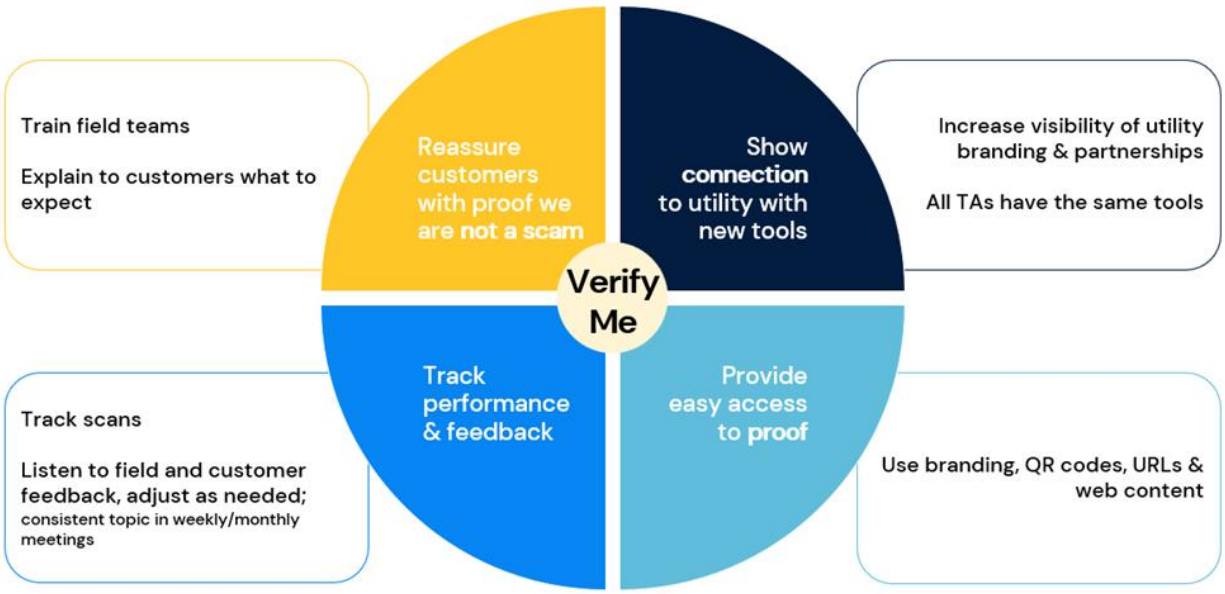
- Convey to customers that our energy efficiency program is legitimate, and not a scam.
- Provide trade ally/contractor tools that show a connection to the area's known utility.
- Ensure there is a thread of consistency within the contractor network, even though there are numerous individual companies.
- Lessen the burden of the field employees.
- Monitor the adoption and use of the tools provided.

Opportunities:

The solution to the scam challenge discussed above was implemented in 2024 and is called "Verify Me". By adding reassurance messaging to specific customer-facing web pages and arming the trade allies with tools that include more Entergy branding like lanyards, a "Verify Me" companion badge, and a padfolio that quickly prove they are authorized to perform work for the Entergy Solutions programs.

Figure 2.1.5

How "Verify me" Provided Solutions to the Challenge



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Figure 2.1.5.2

"Verify me" Items Distributed to Trade Allies in 2024



The adoption and expansion of the leads program has proven to be a great asset that contributes to the ongoing success of the program's trade allies throughout the state. We have organized a system that allows us to efficiently and fairly allocate leads to our trade ally network as customers contact the program through the call center or reach out to program implementors directly, so that we can quickly place those customers in the hands of a trade ally that can meet their needs in their area.

EM&V Recommendations:

- Increase internal QA/QC process on duct sealing to ensure all cooling and heating variables are captured.
- Ensure that customers receive the audit report along with guidance on other energy efficiency recommendations.
- Ensure trade allies are submitting key savings project documentation consistently.

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2.1.6 Planned or Proposed Changes to Program and Budget

- For the 2025 program year, the rebate incentives for duct sealing, ceiling insulation, direct installation products, and tune ups are all being increased to offset increased costs in labor and materials. The HES program will continue to strive to find new ways to reach more customers in more comprehensive and cost-effective ways.

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2.2 Multifamily Homes Program

2.2.1 Program Description

The Multifamily Homes ("MF") program continues to provide cost-effective energy efficiency measures to the multifamily residential and commercial markets throughout the Entergy Arkansas service territory. The program is designed to benefit both the property owners and residents of multifamily dwellings through increased energy efficiency in their homes and at their properties. The MF program continues to help overcome the split incentive barrier by making it easy for property owners to enroll and participate at little to no additional cost. The program offers comprehensive energy saving incentivized measures such as air conditioner and heat pump tune-ups, duct and air sealing, ceiling insulation, and direct install measures. In addition, the MF program offers commercial, common area measures such as lighting, pool pumps, and central HVAC replacement. These energy efficient measures continue to improve apartment communities by increasing comfort and reducing maintenance for property staff. By providing a more comprehensive approach to the multifamily market including qualified common areas, the program has evolved to provide an all-inclusive approach for multifamily property owners making the enrollment process more streamlined.

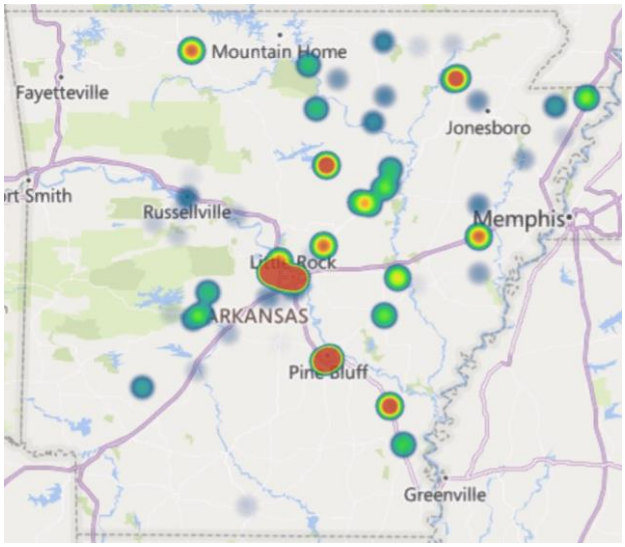
2.2.2 Program Highlights

The 2024 Multifamily Homes Program:

- Saved 10,188 in gross MWh in 2024 with a 98.5 realization rate and a net-to-gross ratio of 100 percent; this resulted in 10,030MWh net energy savings.
- Achieved 1.4 gross MW and 1.4 net MW savings in 2024 with a realization rate of 99.6 percent.
- The program completed energy efficiency upgrades for 2,025 unique participants and incentivized a total of 4,436 measures.
- The program continued to provide services throughout the Entergy Arkansas service territory. The geospatial map in Figure 2.2.2.1 shows the location of work performed in 2024.

Figure 2.2.2.1:

Map of 2024 Properties



- A total of 41 audits were completed, including 30 Tier 1 and 11 Tier 2.
- A total of 2,692 air and duct sealing measures were completed in 2024. Out of these, 229 air sealing and duct sealing projects went through the program's virtual QA/QC process and 285 projects went through the program's field QA/QC process.
- A total of 121 ceiling insulation projects were completed in 2024, of which 8 ceiling insulation projects went through the program's virtual QA/QC process and 6 projects went through the program's field QA/QC process.
- A total of 577 A/C and heat pump tune ups were completed in 2024. Of these, 9 projects went through the program's virtual QA/QC process and 55 projects went through the program's field QA/QC process.
- A total of 395 direct installs measures were completed in 2024, of which25 went through the program's virtual QA/QC process and 110 went through the program's field QA/QC process.
- A total of 5 commercial projects were completed in 2024. All had field QAQC performed.
- A summary of the energy savings by measure category is found in Table 2.2.2.2 below.

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Table 2.2.2.2

Summary of the Products Installed

Measure category	Reported kWh	Sampled kWh	Percentage kWh sampled	Reported kW	Sampled kW	Percentage kW sampled
Home Electronics	44,878	757	1.78%	5.3	0.1	1.9%
Domestic hot water	102,859	1,195	1.2%	10.7	0.1	0.9%
Envelope	2,210,438	26,985	1.2%	290.7	2.8	1.0%
HVAC	7,829,537	94,073	1.2%	1,058.9	11.2	1.1%
Total	**10,193,970**	**123,010**	**1.2%**	**1,356.6**	**14.2**	**1.0%**

- Promotion and outreach in 2024 were primarily through Entergy Arkansas' marketing channels, social media posts, the Entergy Solutions web page, the Circuit Newsletter and trade ally marketing efforts. Networking through the Arkansas Apartment Association and property management companies generated leads that were shared with the trade ally network.
- In 2024, a Trade Ally Coordinator position was created to fill the role of a personal point of contact for all trade allies to better serve them in their individual needs and ensure consistency in communications. Each trade ally receives regular communications through email and telephone, and a bi-weekly electronic newsletter. Additionally, each month a video conference is held offering opportunities for the trade allies to have a roundtable discussion on any current issues or concerns, and several trade allies make up the Trade Ally Council, which meets quarterly. Trade allies also receive a monthly email from each program they participate in with their current allocation status for the quarter, pipeline status, burn rate, and any outstanding QAQC/flawed/complaint issues that need to be addressed. Through these enhancements there has been a noticeable increase in trade ally communications and satisfaction with their participation in the MF program. Trade ally outreach efforts continued through targeting areas outside of central Arkansas and leads coming through different channels such as customer care and program email accounts.
- Both field and virtual training was provided for the trade allies who performed air conditioner tune-ups and weatherization measures. The program account manager worked with the trade ally field technicians, office personnel and owners to provide in-depth training and verification of quality procedures. Additional classroom and field

training was provided as needed, based upon the 100% desktop review of all applications.

2.2.3 Program Budget, Savings and Participants

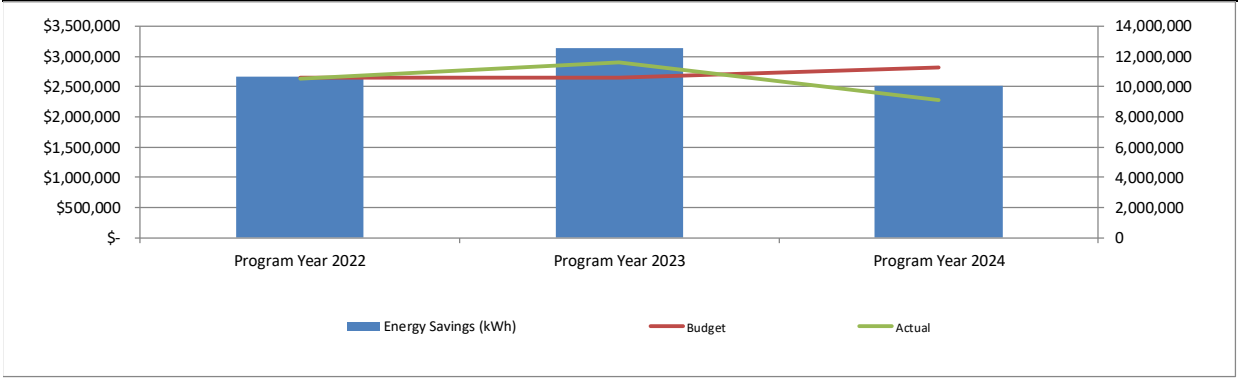
Table 2.2.3 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.2.3

Multifamily Homes Program Budget, Savings and Participants

Multifamily Homes

	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	**Budget**	**Actual**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Actual**	**%**
Program Year 2022	$ 2,650,169	$ 2,621,921	99%	14,010,181	10,645,629	76%	5,501	1,782	32%	3,907	2,348	60%
Program Year 2023	$ 2,650,169	$ 2,896,000	109%	14,010,181	12,564,687	90%	5,501	2,271	41%	3,907	2,673	68%
Program Year 2024	**$ 2,808,661**	**$ 2,282,537**	**81%**	**9,603,665**	**10,030,476**	**104%**	**1,452**	**1,360**	**94%**	**1,991**	**2,025**	**102%**



2.2.4 Description of Participants

Multifamily properties that are duplexes, triplexes, and large complexes with an active Entergy Arkansas account are eligible to participate in the Entergy Arkansas Multifamily Homes Program. Currently, properties under a residential, multifamily, or commercial rate code all qualify for this program. There are no maximum limits on the size of a building or number of qualifying buildings in a single multifamily property.

Table 2.2.4, from the Entergy Arkansas, LLC Evaluation Report – Program Cycle 2024, highlights key demographic information for participants in the MF program. Pertaining to Act

1102, in the Program Cycle, approximately 31 percent of the Multifamily Homes participants were aged 65 or older and approximately 50 percent of the respondents were eligible for LIHEAP benefits. This is based on the most recent process evaluation survey estimates, which were conducted in 2024.

Table 2.2.4

Program Cycle 2024 Demographic Information estimated from 2024 Process Surveys – Multifamily Homes

*Participants may not sum to participant totals highlighted in bold due to rounding error.

Respondent characteristic		Percentage*	Participants17
Respondent age	25–34	11.5%	234
	35–44	15.4%	312
	45–54	26.9%	545
	55–64	15.4%	312
	65 or older	30.8%	623
	Participants (n)		**2,025**
LIHEAP status	LIHEAP-eligible	50.0%	1,012
	Not LIHEAP-eligible	50.0%	1,012
	Participants (n)		**2,025**

*Percentages are estimated from BY2024 process surveys.

2.2.5 Program Challenges and Opportunities

Challenges:

With the removal of lighting as a measure in 2023, the MF program saw a significant decrease in the number of unique measures in 2024, though this decrease has not affected hitting the program's savings goals due to the increased focus on other measures.

While the rate of price increases has slowed compared to recent years, the cost of EE products, labor, and shipping are still on the rise. To help offset these costs, the program has increased

[17] Participant count includes all participants reported in each program, including those that did not claim energy or demand savings such as DI Labor Fee to track additional incentive for contractors without savings, and audit measures.

incentives for air sealing, duct sealing, audits, heat pump ("HP") and air conditioner ("AC") tune-ups, and direct install ("DI") measures.

The MF program will continue to use the ALN apartment software to help mitigate the issue of turnover within the property management sector. Along with the use of this software, trade allies have been using a broader approach in the multifamily housing sector by continuing to target owners/property management firms which can open or close the door on a larger scale. The overall view is that it will increase volume while lowering the number of conversations needed to connect with decision makers which has been an issue in the past.

Just as the FTC has reported the rise of impersonation scams across the U.S., trade allies for the Entergy Solutions Program were seeing customer's concerns regarding this scam first-hand. Some trade allies have experienced deep skepticism from customers, doors going unanswered, and even the police being called to report them. To combat this, we needed a way to:

- Convey to customers that our energy efficiency program is legitimate, and not a scam.
- Provide trade ally/contractor tools that show a connection to the area's known utility.
- Ensure there is a thread of consistency within the contractor network, even though there are numerous individual companies.
- Lessen the burden of the field employees.
- Monitor the adoption and use of the tools provided.

Opportunities:

The solution to the challenge above was implemented in 2024 and is called "Verify me." By adding reassuring messaging to specific customer-facing web pages and arming the trade allies with tools that include more Entergy branding like lanyards, a "Verify me" companion badge, and a padfolio that quickly prove they are authorized to perform work for the Entergy Solutions programs.

Figure 2.2.5

How “Verify me” Provided Solutions to the Challenge

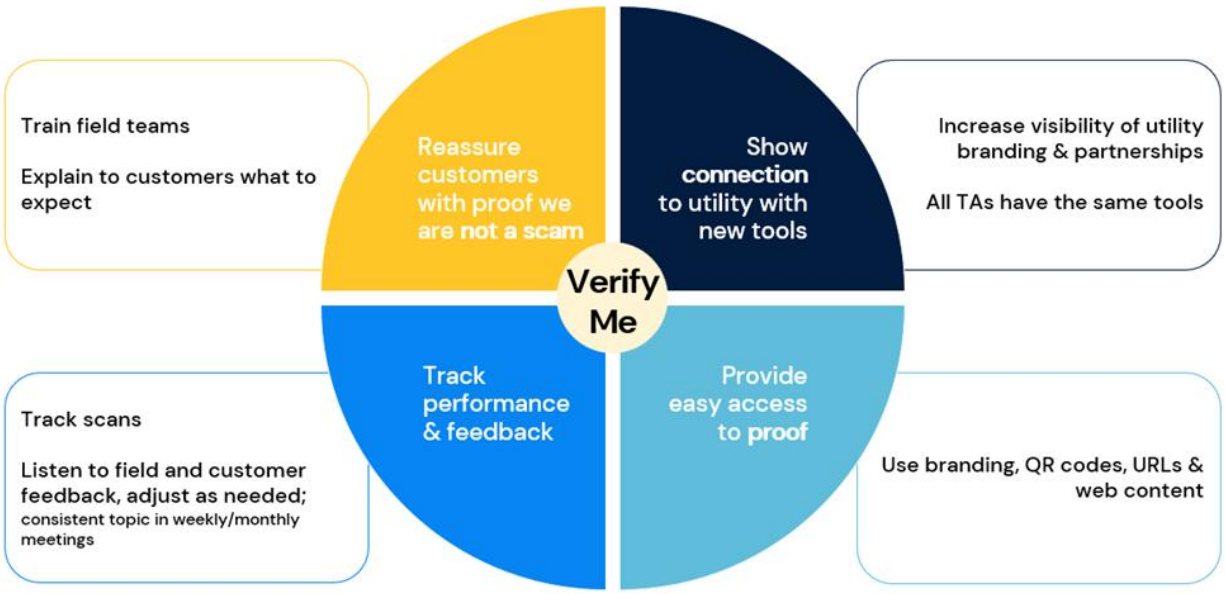


Figure 2.2.5.2

“Verify me” Items Distributed to Trade Allies in 2024



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The adoption and expansion of the leads program has proven to be a great asset that contributes to the ongoing success of the program's trade allies throughout the state. We have organized a system that allows us to efficiently and fairly allocate leads to our trade ally network as customers contact the program through the call center or reach out to program implementors directly, so that we can quickly place those customers in the hands of a trade ally that can meet their needs in their area.

EM&V Recommendations:

- Increase the volume on Internal QA/QC efforts on the duct sealing measure for all heating types paying close attention to heating and cooling variables making sure they are captured correctly.
- Collect documentation that clearly verifies the installation method and location of advanced power strip or use "average APS" consistently in the program. Given the nature of the measure, it is recommended the AR TRM add an in-service rate for Tier 1 smart strip in the next update process.
- Utilize the rated/measures capacity to factor into calculating AC/ HP tune-up savings.
- Heating type documentation, including but not limited to data tags, should be collected for all projects where savings calculated is contingent on heating type.

2.2.6 Planned or Proposed Changes to Program and Budget

Proposed changes:

- An increase in incentives for air sealing, duct sealing, audits, tune-ups, and DI products will be implemented in 2025 to account for inflation and product price increases. An increase in audit incentives will continue to be implemented in 2025 due to the rise in fuel and vehicle maintenance costs.

2.3 Manufactured Homes Program

2.3.1 Program Description

The Manufactured Homes ("MA") Program was designed to improve energy efficiency and benefit the owners and residents of manufactured homes and parks in the Entergy Arkansas service territory.

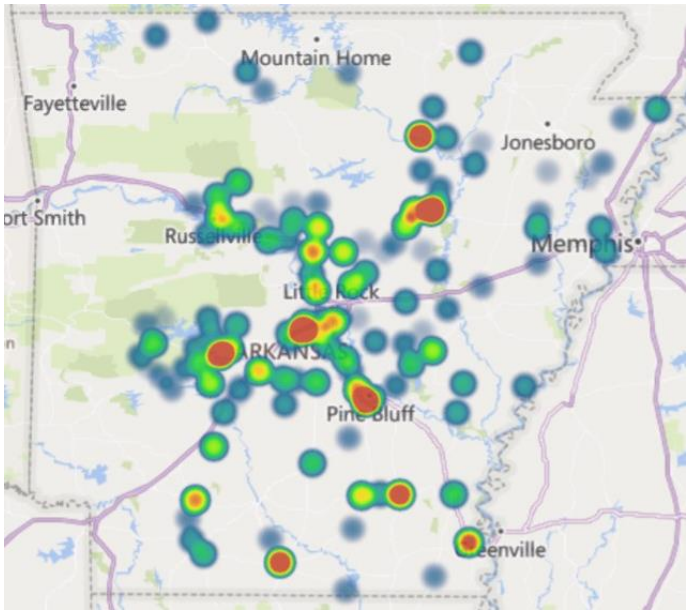
This program provides much-needed services for a hard-to-reach customer segment, where customers paying the electric bill often do not have the ability to make energy efficiency upgrades. The program overcomes the upfront cost hurdle by making it easy for the occupant to participate at little to no cost. Another hurdle to overcome is the split incentive, where the landlord pays for the energy efficiency improvement while the tenant benefits by immediate improvement in comfort. The program incentivizes energy saving measures such as air conditioner and heat pump tune-ups, and duct and air sealing, which continue to make up the bulk of energy savings for the program. DI measures such as advanced power strips, high efficiency showerheads, and kitchen and bathroom aerators for customers with electric water heating, are still offered under the program. In addition, this program educates tenants and owners about the benefits of having energy saving measures installed on their property. Residents receive personalized tips on how to improve their homes' efficiency and complete a customer satisfaction survey. Residents are informed of other Entergy Arkansas energy efficiency programs, as well as other programs available to them if they use natural gas energy.

2.3.2 Program Highlights

- Saved 4,684 gross MWh in 2024 with a 96.6%realization rate and a net-to-gross ratio of 100%, resulting in 4,525MWh net savings.
- Achieved 0.6 gross MW and 0.6 net MW savings in 2024 with a realization rate of 98.9%.
- In 2024, a total of 563 manufactured homes participated in the program, some receiving more than one measure. A total of 1,096 measures were incentivized.
- The program continued to provide services throughout the Entergy Arkansas service territory. The geospatial map in Figure 2.3.2 shows the location of work performed in 2024.

Figure 2.3.2:

2024 Participants



- A total of 48 audits were completed, including 20 Tier 1 and 18 Tier 2.
- Out of 632 projects, 15 duct and air sealing jobs went through the program's virtual QA/QC process and39 projects went through the program's field QA/QC process.
- A total of 182 air conditioner and heat pump tune ups were completed, 7 of which went through the program's virtual QA/QC process, and 14 went through the program's field QA/QC process.
- There were 115 direct install projects, of which 4 went through the program's virtual QA/QC process and 9 projects went through the program's field QA/QC process.
- Out of 5 Wi-Fi thermostat projects,1 went through the program's field QA/QC process.
- In alignment with other residential programs within the Entergy Arkansas portfolio, in 2024 the Joint Incentive Program expanded into MA. The Joint Incentive Program was developed to proactively find opportunities to partner with other service providers to provide energy efficiency initiatives. The Joint Incentive Program, in collaboration with Entergy Arkansas, Summit Utilities, and Black Hills Energy, was formed for select trade allies to use when providing qualifying customers with energy efficiency upgrades
- In 2024, a Trade Ally Coordinator position was created to fill the role of a personal point of contact for all trade allies to better serve them in their individual needs and ensure

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consistency in communications. Each trade ally receives regular communications through email and telephone, and a bi-weekly electronic newsletter. Additionally, each month a video conference is held offering opportunities for the trade allies to have a roundtable discussion on any current issues or concerns, and several trade allies make up the Trade Ally Council, which meets quarterly. Trade allies also receive a monthly email from each program they participate in with their current allocation status for the quarter, pipeline status, burn rate, and any outstanding QA/QC/flawed/complaint issues that need to be addressed. Through these enhancements there has been a noticeable increase in trade ally communications and satisfaction with their participation in the MA program.

- Both field and virtual training was provided for the trade allies who performed air conditioner tune-ups and weatherization measures. The program account manager worked with the trade ally field technicians, office personnel and owners to provide in-depth training and verification of quality procedures. Additional classroom and field training was provided as needed, based upon the 100% desktop review of all applications.
- The program continued to be more accessible to the Hispanic populations by having marketing collateral available in both English and Spanish to target this market and Spanish speaking trade allies are marked as such in the Find a Provider tool.
- Promotion and outreach activities were executed in a variety of marketing channels. Paid media with print, digital and social media tactics were very successful in driving awareness and engagement. Entergy Arkansas' marketing channels were also used to promote this program via social media posts, the Entergy Solutions web page, the Entergy Circuit Newsletter and Entergy bill inserts. Trade ally co-branded marketing materials and referrals were also used to reach out to customers to increase awareness and participation. These marketing steps helped implement the program across the entire Entergy Arkansas service territory, rather than focusing on narrow areas.

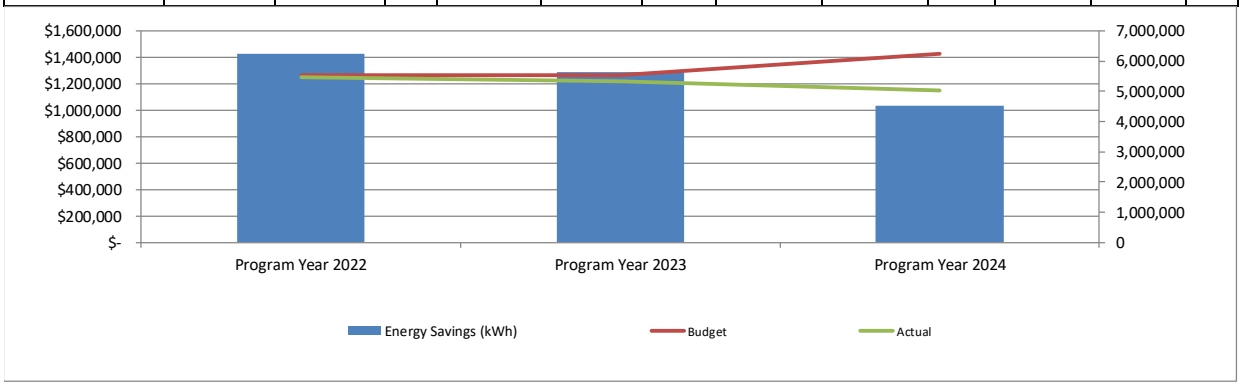
2.3.3 Program Budget, Savings and Participants

Table 2.3.3 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.3.3
Entergy Solutions for Manufactured Homes Program Budget, Savings and Participants

Manufactured Homes

	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	**Budget**	**Actual**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Actual**	**%**
Program Year 2022	$ 1,261,021	$ 1,247,001	99%	5,403,192	6,226,535	115%	674	792	117%	1,566	627	40%
Program Year 2023	$ 1,261,021	$ 1,215,375	96%	5,403,192	5,631,397	104%	674	806	119%	1,566	625	40%
Program Year 2024	**$ 1,426,036**	**$ 1,144,709**	**80%**	**5,023,384**	**4,525,460**	**90%**	**805**	**640**	**80%**	**602**	**1,024**	**170%**



2.3.4 Description of Participants

Participants with an active Entergy Arkansas account under a residential homes rate code qualify for this program. These are typically located within a park or complex and there are no maximum limits to the size of a park or complex. Manufactured homes comprise roughly 14% of the Company's housing stock, which is twice the national average, but there are still challenges reaching the market and generating leads.[18]

Table 2.5.4, from the Entergy Arkansas, LLC Evaluation Report – Program Cycle 2024 highlights key demographic information for participants in the Manufactured Homes Program.

[18] https://www.huduser.gov/periodicals/ushmc/fall02/summary_2.html#:~:text=Rounding%20out%20the%20top%2010,and%20Kentucky%20(13.3%20percent).

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Approximately 36% of the Manufactured Homes Program participants were aged 65 or older and approximately 46% of the respondents were eligible for LIHEAP benefits. This is based on the most recent process evaluation survey estimates, which were conducted in 2024.

Table 2.5.4

Program Cycle 2024 Demographic Information estimated from 2018 Process Surveys

Manufactured Homes Program

*Participants may not sum to participant totals highlighted in bold due to rounding error.

Respondent characteristic		Percentage*	Participants19
Respondent age	18–24	6.1%	34
	25–34	15.2%	85
	35–44	24.2%	136
	45–54	12.1%	68
	55–64	6.1%	34
	65 or older	36.4%	205
	Participants (n)		**563**
LIHEAP status	LIHEAP eligible	46.4%	261
	Not LIHEAP eligible	53.6%	302
	Participants (n)		**563**

*Percentages are estimated from BY2024 process surveys.

2.3.5 Program Challenges and Opportunities

Challenges:

With the removal of lighting as a measure in 2023, the MA program saw a significant decrease in the number of unique measures in 2024, though this decrease has not affected meeting the program's savings goals due to the increased focus on other measures.

[19] Participant count includes all participants reported in each program, including those that did not claim energy or demand savings such as DI Labor Fee to track additional incentive for contractors without savings, and audit measures.

While the rate of cost increases has slowed compared to recent years, the cost of EE products, labor, and shipping are still on the rise. To help offset these costs, the program is increased incentives for air sealing, audits, heat pump tune-ups, and DI measures in 2024.

Residents of manufactured homes are part of a particularly hard-to-reach market for several reasons. In general, residents of manufactured homes are less likely to invest in energy efficiency upgrades to their home because the out-of-pocket cost is simply too high to perform these upgrades. Even though the long-term effects can be very beneficial, renters of manufactured homes often don't have disposable income to invest in these upgrades. This program helps not only provide beneficial upgrades at no cost to the residents, but it also educates the customer about the fundamentals of energy efficiency and energy usage.

The most effective means of reaching customers is direct outreach from the trade ally to mobile home park owners. Bilingual and co-branded marketing material is available for use in the Manufactured Homes Program. This material helps the trade allies sell the program to prospective mobile home parks and individual owners.

Due to the mobile nature of manufactured homes, we occasionally run into homes that have previously participated in the program based on Meter ID when a new or different home has been placed on the previous lot. If there is not sufficient evidence of there being a different manufactured home placed on the same lot this can prevent customers from receiving energy efficient measures or prevent trade allies being paid for work they have already performed.

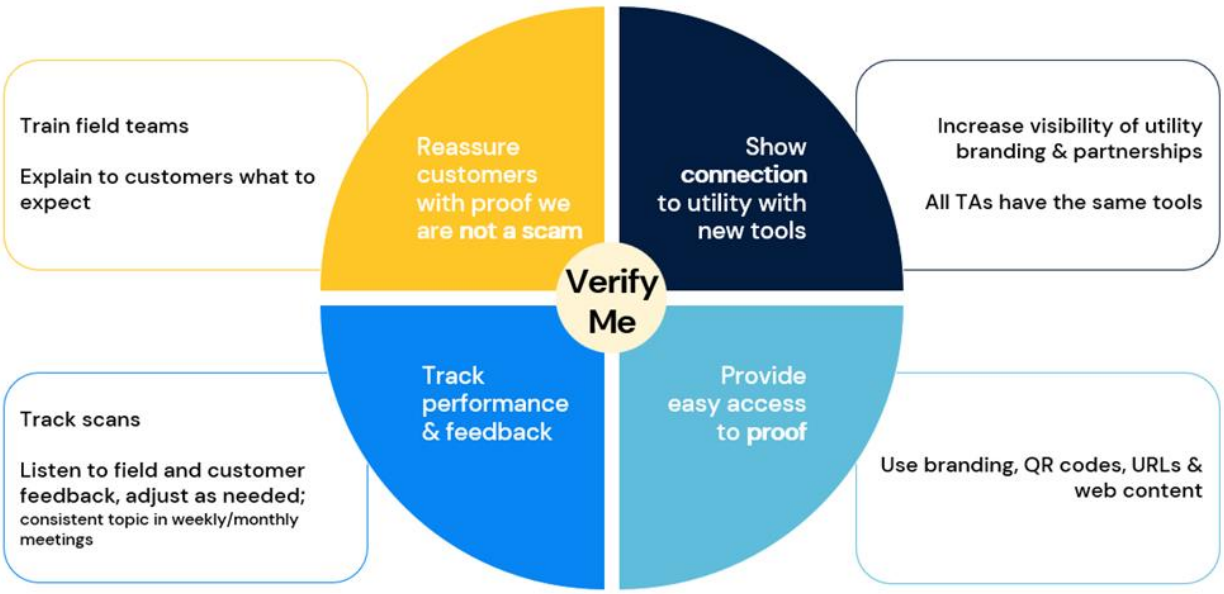
Just as the FTC has reported the rise of impersonation scams across the U.S., trade allies for the Entergy Solutions Program were seeing customer's concerns of this scam first-hand. Some trade allies have experienced deep skepticism from customers, doors going unanswered, and even the police being called to report them. To combat this, we needed a way to:

- Convey to customers that our energy efficiency program is legitimate, and not a scam.
- Provide trade ally/contractor tools that show a connection to the area's known utility.
- Ensure there is a thread of consistency within the contractor network, even though there are numerous individual companies.
- Lessen the burden of the field employees.
- Monitor the adoption and use of the tools provided.

Opportunities:

The solution to the challenge above was implemented in 2024 and is called “Verify me”. By adding reassuring messaging to specific customer-facing web pages and arming the trade allies with tools that include more Entergy branding like lanyards, a “Verify me” companion badge, and a padfolio that quickly prove they are authorized to perform work for the Entergy Solutions programs.

Figure 2.3.5
How “Verify me” Provided Solutions to the Challenge



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Figure 2.3.5.2

"Verify me" Items Distributed to Trade Allies in 2024



The adoption and expansion of the leads program has proven to be a great asset that contributes to the ongoing success of the program's trade allies throughout the state. We have organized a system that allows us to efficiently and fairly allocate leads to our trade ally network as customers contact the program through the call center or reach out to program implementors directly, so that we can quickly place those customers in the hands of a trade ally that can meet their needs in their area.

Challenges:

While the mobility of manufactured homes presents a unique challenge, it also presents opportunity. With sufficient evidence of a different home being placed on the same lot, customers that may have been passed over can still receive energy efficient measures.

EM&V Recommendations:

- Continue the internal quality assurance/quality control (QA/QC) process on the duct sealing measure for all heating types to ensure all cooling and heating variables are captured correctly.
- Collect documentation that verifies the installation location of the smart strip or use "average APS" consistently in the program.

- Collect heating type documentation for projects where savings are dependent on heating type.
- Ensure contractors are consistently submitting key savings project documentation that is legible and that key parameters are identifiable.

2.3.6 Planned or Proposed Changes to Program and Budget

An increase in rebates for air sealing, audits, heat pump tune-ups and DI products will be implemented in 2025 to account for inflation and product price increases. An increase in audit incentives will also be implemented in 2025 due to inflation and rising fuel costs.

2.4 Low-Income Solutions

2.4.1 Program Description

The Low-Income Solutions ("LIS") program was launched in Entergy Arkansas' residential portfolio in 2020, and was designed to serve income-qualified customers, as defined under Act 1102 of 2017 and in accordance with Order No. 30 in Docket No. 13-002-U. Like Entergy Arkansas' other home energy efficiency programs in the Entergy Arkansas portfolio, the Low-Income Solutions ("LIS") program offers many energy efficiency opportunities for owners and renters of single-family homes, manufactured homes, and multi-family dwellings in Entergy Arkansas' service territory.

The LIS program helps income-qualified residents achieve electricity savings by working with participating trade allies and Community Based Organizations ("CBOs"). Trade allies help residential customers analyze their energy use, identify energy efficiency improvement projects and install low- or no-cost energy-saving measures in the home. CBOs help the LIS program identify eligible customers and distribute program information to the local communities they serve.

Design elements of the LIS program include incentives to offset up to 100% of the cost of an energy evaluation provided by a certified trade ally. In addition, LIS customers may receive minor health and safety products or repairs for eligible homes, such as bathroom ventilation, smoke detectors, etc. To determine eligibility and receive an incentive, the trade ally completes both a home energy assessment and asks the resident to self-certify their income eligibility for participation. If the home is a candidate for health and safety measures, the trade ally will perform those during the visit or a subsequent visit. The program offers comprehensive energy-saving measures such as air conditioner and heat pump tune-ups, duct and air sealing, attic insulation, advanced power strips and high efficiency showerheads and aerators for all electric properties.

2.4.2 Program Highlights

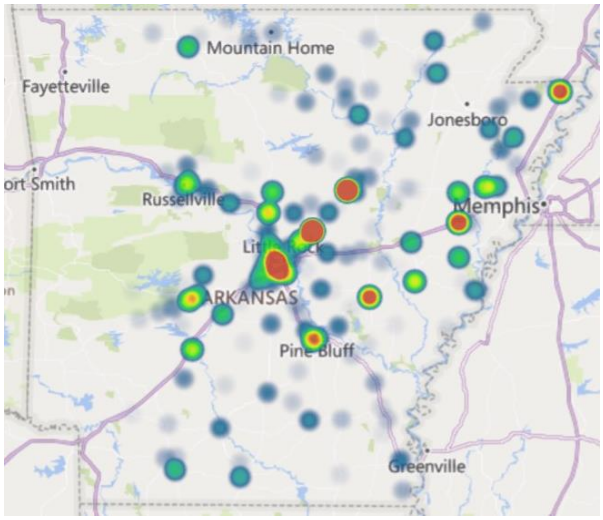
In 2024, the LIS Program:

- Saved 7,954 gross MWh in 2024 with a 96.5% realization rate and a net-to-gross ratio of 100%, resulting in 7,675 MWh net savings.

- Achieved 1.9 gross MW and 1.8 net MW savings in 2024 with a realization rate of 97.9%.
- Incentivized 6,839 individual measures, and served 1,859 individual Entergy account holders of which:
    - 53% were single-family homes.
    - 43% were multifamily apartments.
    - 4% were manufactured homes.
- Installed at least one health and safety measure in 72% of participating properties, for a total of 2,081 measures installed.
- A total of 209 audits were completed, including 192 Tier 1 and 17 Tier 2.
- A total of 2,375 duct and air sealing jobs were done, of which30 went through the program's virtual QA/QC process and 371 went through the program's field QA/QC process.
- There were 476 ceiling insulation measures performed, of which 11 went through the program's virtual QA/QC process and 64 went through the program's field QA/QC process.
- Out of 349 tune up projects, 3 went through the program's virtual QA/QC process and 60 went through the program's field QA/QC process.
- There were 647 direct install projects, of which 11 went through the program's virtual QA/QC process and 140 went through the program's field QA/QC process.
- The program continued to provide services throughout the Entergy Arkansas service territory. The geospatial map in Figure 2.4.2 shows the location of work performed in 2024.

Figure 2.4.2:

2024 Participation



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- One of the LIS program's missions is to increase opportunities for low income and elderly customers to access energy efficiency services. In 2024, the LIS program continued to grow the partnerships with both CBOs and outside agencies, including with the Better Community Development ("BCD") Group, a non-profit CBO who receives Weatherization Assistance Program ("WAP") funding to weatherize homes and apartments in Arkansas. The program also continued to provide braided incentives in 2024 utilizing both LIS incentives and WAP funding. Working together, the LIS program and BCD successfully funded projects for 7 single family and manufactured homes and 10 apartments.

- In alignment with other residential programs within the Entergy Arkansas portfolio, in 2024 the Joint Incentive Program expanded into LIS. The Joint Incentive Program was developed to proactively find opportunities to partner with other service providers to provide energy efficiency initiatives. The Joint Incentive Program, in collaboration with Entergy Arkansas, Summit Utilities, and Black Hills Energy, was formed for select trade allies to use when providing qualifying customers with energy efficiency upgrades and this collaboration funded 24 projects, and all 24 participants received Health & Safety measures at their home. One (1) unique project also saw the full utilization of both utilities Health & Safety funds to receive crucial upgrades to their home.

- Traditional promotion and outreach activities were also executed through various marketing channels, including paid media with print, digital and social media tactics. Entergy Arkansas' marketing channels were also used to promote this program via social media posts, the Entergy Solutions web page, the Entergy Circuit newsletter and Entergy bill inserts. These marketing efforts helped promote the LIS program across the entire Entergy Arkansas service territory.

- We also attended multiple customer-supporting events including numerous SEACAC Energy Efficiency Training Sessions, Super Tax Day events, Food Bank events, along with CADC Educational Events. In addition, we attended the Project Impact Community Launch Party, Watershed Family Resources Event, Back to

School Bash, and Ward 6 CommUNITY Block Party hosted by the City of Little Rock.

2.4.3 Program Budget, Savings and Participants

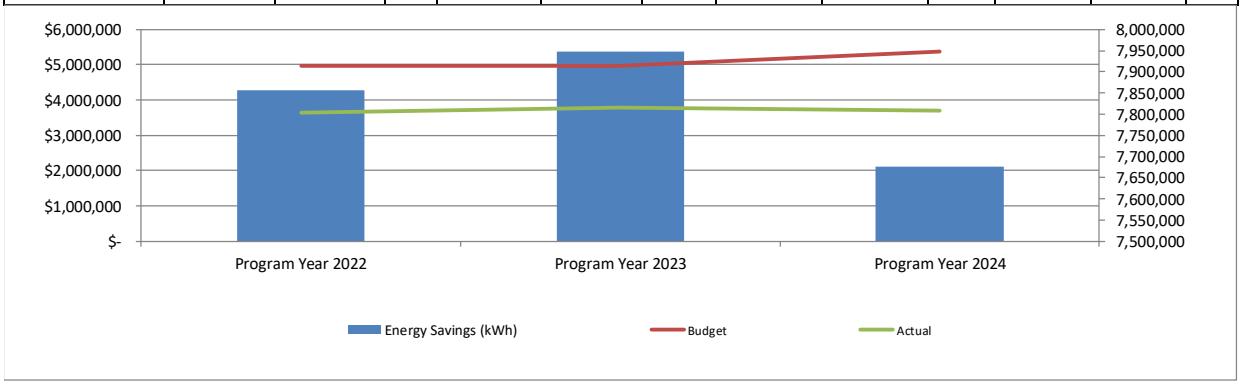
Table 2.4.3 is the program budget, annual energy savings and participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.4.3 Low-Income Solutions

Entergy Solutions for Low-Income Program Budget, Savings and Participants

Low-Income Solutions

	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	**Budget**	**Actual**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Actual**	**%**
Program Year 2022	$ 4,957,950	$ 3,652,325	74%	7,862,580	7,856,081	100%	2,946	1,889	64%	2,790	1,727	62%
Program Year 2023	$ 4,957,950	$ 3,796,363	77%	7,862,580	7,947,477	101%	2,946	1,847	63%	2,790	1,654	59%
Program Year 2024	**$ 5,384,249**	**$ 3,691,225**	**69%**	**7,872,899**	**7,675,406**	**97%**	**1,904**	**1,848**	**97%**	**2,193**	**1,859**	**85%**



Program Events & Training

- The LIS program continued to provide education and feedback to trade allies on program requirements, health and safety measures, and identifying income-qualified customers. The LIS program also participated in the annual Trade Ally Kickoff in tandem with the other residential Entergy Solutions programs. This summit for business principals and crew leaders included training on program updates, policy/procedural updates, and program performance rewards.

- All technicians performing test-in and test-out on customer homes are required to hold a Building Performance Institute professional certification. Trade allies with allocations in the LIS program are strongly encouraged to pursue additional training on home health and safety, such as the Building Performance Institute's Health Housing Principles Certificate of Knowledge.

2.4.4 Description of Participants

Anyone with an active Entergy Arkansas account who meets the income eligibility qualifications for the LIHEAP administered by the Department of Human Services[20] can participate in the LIS program. Participants include anyone who lives in a single-family home, manufactured home or multifamily dwelling. Large multifamily complexes can be qualified for the LIS program at the property level if the property manager certifies that 60% or more of the residents meet the LIHEAP income requirements or the complex receives federal aid from the U.S. Department of Housing and Urban Development ("HUD"). The property must have a central ducted heat and air conditioning unit to receive the core weatherization measures, an air conditioner tune-up or a thermostat. Properties without a central ducted heat and air conditioning system are eligible for DI measures and health and safety measures. Participants are counted on a per account basis.

Table 2.4.4, from the Entergy Arkansas, LLC Evaluation Report – For Program Cycle 2024, highlights key demographic information for participants in the Low-Income Solutions Program. Pertaining to Act 1102, in the Program Cycle, approximately 35.7% of the low-income participants were aged 65 or older and approximately 53.7% of the respondents were eligible for LIHEAP benefits.

[20] *See* Act 1102 of 2017.

Table 2.4.4
For Program Cycle 2024 Demographic Information from Process Surveys Low-Income Solutions

Respondent characteristic		Percentage*	Participants21
Respondent age	18–24	2.4%	45
	25–34	11.9%	2211
	35–44	23.8%	442
	45–54	11.9%	221
	55–64	14.3%	266
	65 or older	35.7%	664
	Participants (n)		**1,859**
LIHEAP status	LIHEAP-eligible	53.7%	998
	Not LIHEAP-eligible	46.3%	861
	Participants (n)		**1,859**

*Percentages are estimated from PY2024 process surveys.

*Participants may not sum to participant totals highlighted in bold due to rounding.

2.4.5 Program Challenges and Opportunities

Opportunities:

The solution to the challenge below was implemented in 2024 and is called “Verify me”. By adding reassuring messaging to specific customer-facing web pages and arming the trade allies with tools that include more Entergy branding like lanyards, a “Verify me” companion badge, and a padfolio that quickly prove they are authorized to perform work for the Entergy Solutions programs.

Challenges:

With the removal of lighting as a measure in 2023, the LIS program saw a significant decrease in the number of unique measures in 2024, though this decrease has not affected hitting the program’s savings goals due to the increased focus on other measures. While the rate of cost

[21] Participant count includes all participants reported in each program including those that did not claim energy or demand savings such as duplicate *smart thermostat* measures claimed in the SDLC program, *health and safety* measures, *contractor performance bonus* measures, and *audit* measures.

increases has slowed compared to recent years, EE products, shipping, and labor costs continue to rise. To offset the cost increases for our trade ally network, the program increased rebate incentives for air sealing, ducts sealing, ceiling insulation, tune ups, and DI items in 2024.

Increasing the number of CBO partnerships in 2024 continued to be limited by CBOs' low bandwidth to engage in any activities beyond their core service offerings. Staffing challenges, constrained administrative support, and low operating budgets combined to limit the number of CBOs that could partner with the LIS program in promoting energy efficiency services.

Just as the FTC has reported the rise of impersonation scams across the U.S., trade allies for the Entergy Solutions Program were seeing customer's concerns of this scam first-hand. Some trade allies have experienced deep skepticism from customers, doors going unanswered, and even the police being called to report them. To combat this, we needed a way to:

- Convey to customers that our energy efficiency program is legitimate, and not a scam.
- Provide trade ally/contractor tools that show a connection to the area's known utility.
- Ensure there is a thread of consistency within the contractor network, even though there are numerous individual companies.
- Lessen the burden of the field employees.
- Monitor the adoption and use of the tools provided.

Figure 2.4.5

How “Verify me” Provided Solutions to the Challenge

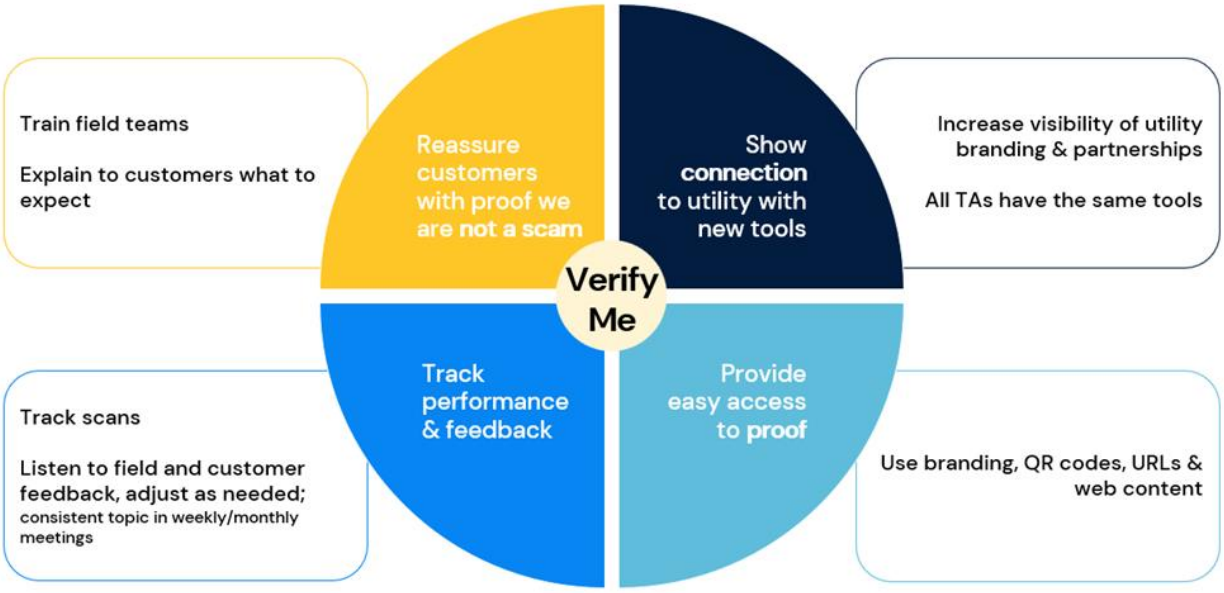


Figure 2.4.5.2

“Verify me” Items Distributed to Trade Allies in 2024



In 2025, a targeted approach will be taken to work with CBOs to understand the unique challenges they face and identify opportunities for further collaboration in an effort to continue to increase engagement them and the program.

EM&V Recommendations:

- Increase QA/QC on the advanced power strip (“APS”) measure to ensure contractors are educated on installing the APS and collecting documentation that clearly verifies the installation location of the smart strip.
- Ensure contractors are consistently submitting key savings project documentation.
- Ensure all documentation, especially photo documentation, is clear and legible.

2.4.6 Planned or Proposed Changes to Program and Budget

An increase in rebates for air sealing, duct sealing, ceiling insulation A/C and heat pump tune-ups and DI products will be implemented in 2025 to account for inflation.

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2.5 Point of Purchase Solutions

2.5.1 Program Description

The Point of Purchase Solutions Program is an energy efficiency program designed to educate and influence Entergy Arkansas residential customers to purchase and use ENERGY STAR® qualified appliances, advanced thermostats and advanced power strips ("APSs") in their homes, and to provide commercial customers with a convenient option for participation when completing smaller renovations or ongoing maintenance and repair. In 2024, as in past years, the Point of Purchase Solutions Program sought to minimize market barriers to participation for Entergy Arkansas' residential and customers. These barriers include lack of information about and access to ENERGY STAR® qualified products, as well as higher first-cost for these products and the time it takes to research products prior to purchase. The two main program activities include (1) retailer and distributor recruitment and merchandising, and (2) administration of the incentive payment process.

Working with manufacturers, distributors and retailers, the program provided residential customers with discounts on qualified products at participating retail locations via rebates delivered after purchases and instant discounts at retail. The online marketplace, where residential customers can purchase discounted energy efficiency products, was originally launched in late 2020, and continued to be offered in 2024.

The program also continued working with non-profit organizations such as food banks across the state to distribute free energy efficiency products to their constituents.

In 2024, residential customers interested in purchasing qualifying advanced thermostats had three methods for participating: purchase online with a discount code, log into a web portal and receive an instant discount code after filling out a form with information about their home, or purchase at full price and receive a rebate post-purchase. This approach gives customers maximum flexibility to participate in the way they feel most comfortable, with the widest possible range of product choices. In the fifth year in which the program offered incentives on smart thermostats, the measure had slightly lower participation, with 725 units incentivized, a 15% decrease over 2023.

In 2024, the program continued relationships with L'Image, Greenlite and Maxlite, to ensure deeply discounted products were available year-round at participating retailers such as Dollar

Tree, Habitat for Humanity, Goodwill, Salvation Army and independent retailers across the state. These market partners rely on utility sponsorships for these promotions, which bring in high quality energy efficient products outside of the retailer's normal inventory procurement process. The products, because they are not on the retailer's planogram, typically get prominent placement and sell quickly because of the clear value. These combined efforts resulted in over 32,437 APS unit sales, 62 air purifier unit sales, 77 dehumidifier unit sales, and 27,235 air sealing unit sales in 2024 to customers the utility considers to be "hard to reach."

Electrical distributors participating in the program have discounted sales to commercial customers in 2024 decreasing 67% from 2023. One major reason for the decline is the decrease in program goal in 2024 compared to 2023. In an effort to evolve the program offerings beyond solid state lighting, work on new measures continued in 2024.

In 2024, a portion of program resources was allocated to non-lighting measures such as advanced thermostats, APSs, pool pumps, air purifiers, dehumidifiers, weatherization, heat pump water heaters ("HPWH"), room air conditioners, and freezers. A diverse measure mix that includes non-lighting measures will keep the program relevant and establish a solid foundation for its ongoing success.

Table 2.5.1

Year Over Year (2019-24) Participation for All Measures

Measures	2021	2022	2023	2024
Advanced Power Strips	105,696	63,641	148,668	168,605
Aerator	0	0	0	8
Air Purifier	114	38	36	9,614
Appliance Recycling			457	926
Dehumidifier	45	33	14	885
Freezers	5	11	6	
HPWH	44	57	61	56
LED Night Light	0	0	0	8
Pool Pumps	112	55	18	9
Room AC	46	158	226	0
Smart Thermostats	1,473	905	854	725
Weatherization	0	27	49	526,780

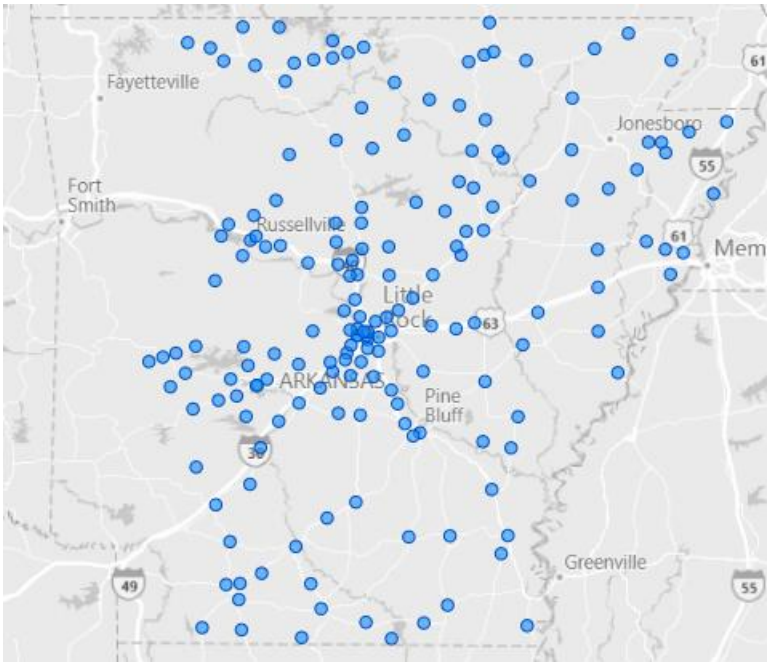
Lastly, the program continued training sales associates using the existing toolkit for retailers to enable them to promote the energy- and cost-saving benefits of such products to their customers. The continued strength of this program reflects high customer and trade ally satisfaction as well as Entergy Arkansas' success in expanding the program through a diverse marketing and outreach strategy.

2.5.2 Program Highlights

The program achieved an evaluated gross annual energy savings of 66,792 MWh, and 57,949 MWh net savings. To put this in perspective, the energy saved by this program in 2024 is equivalent to the greenhouse gas emissions from 2.8 million gallons of gasoline consumed, or 5,478 homes' electricity use for one year. The program also achieved approximately 6.0 MW of net demand savings. The widespread distribution of air sealing and APS products to those most impacted by macroeconomic and environmental factors continued to drive the volume of product units reported in 2024.

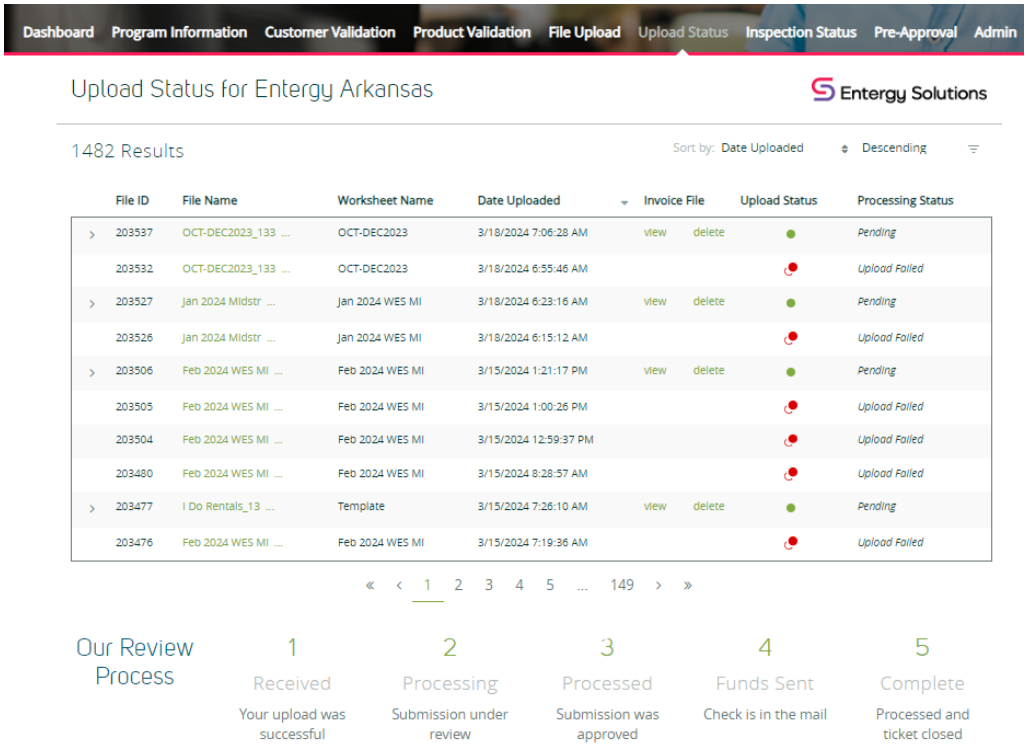
In 2024, Entergy Arkansas offered a convenient way to remove and recycle old, energy-inefficient refrigerators and freezers. Not only were the collected appliances not placed in a landfill, but after they were dismantled by recycling technicians, with 95% of the materials (such as plastic, metals, and glass) recycled. In 2024, 711 refrigerators and 215 stand-alone freezers were recycled, which is equivalent to the annual carbon dioxide emissions from 105 homes' energy use or the carbon dioxide emissions from charging 106,868,466 smartphones.

Figure 2.5.2.1 Appliance Recycling Pick-up Locations



In 2024, distributors participating in the commercial program continued using the web portal introduced in 2020 for validating and submitting sales reports. The site, called Program Partner Central ("PPC"), enables the verification of customer and product eligibility, and provides real-time feedback on submitted sales data so the trade ally has the assurance that their report is error-free, reducing time spent communicating and correcting issues. The site also provides dashboards so trade allies can track their participation, processing status and payment information, one of the most frequently requested items from trade allies.

Figure 2.5.2 Program Partner Central Online Tool



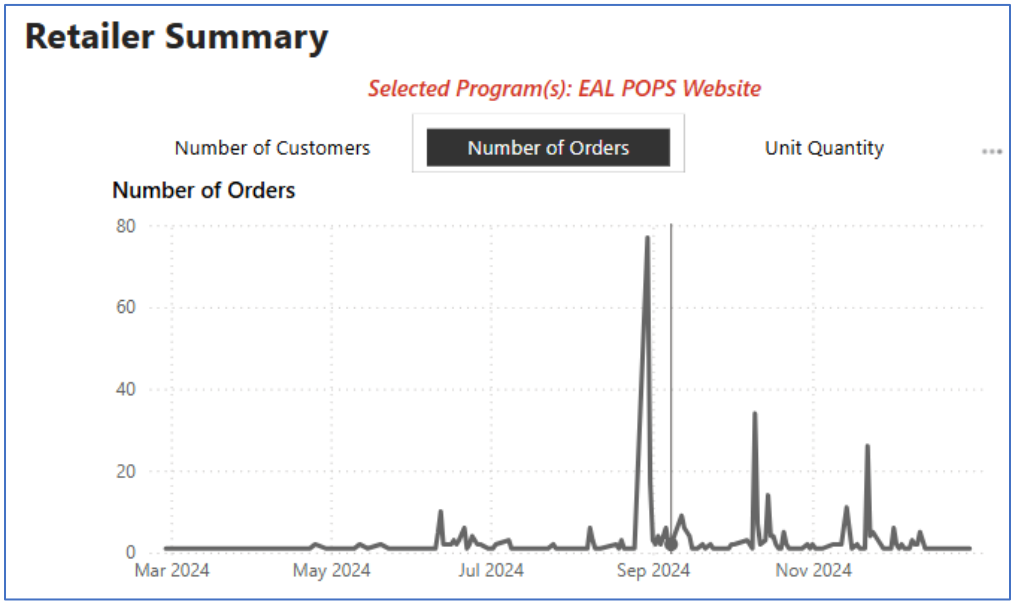
The program was recognized by the Environmental Protection Agency for the second time in 2024 in the Excellence in ENERGY STAR Marketing category, following five years of award-winning performance in Program Delivery. The Point of Purchase Solutions program marketing was comprehensive in 2024 and used various tactics to drive awareness and demand – reaching both new and past program participants. Rather than focusing solely on the incentives offered for measures, messages were designed to capture attention and educate customers on product energy and non-energy benefits, as well as financial incentives.

Email marketing proved to be a very effective marketing tactic in 2024. Most of the emails deployed to residential customers primarily drove to the online marketplace but included secondary cross promotion of the retail coupon, refrigerator recycling, and rebate offerings. Likewise, emails deployed through the Entergy Solutions commercial program included cross promotion of the commercial POPS program offerings. Subject lines continued to be tested and best practices leveraged such as the inclusion of emojis, questions and deadlines to increase customer engagement.

The online marketplace continued to provide residential customers in every part of the state the ability to make contactless purchases of energy efficiency products from the safety of their home. All measures in the residential program were offered via this channel, except for heat pump water heaters and pool pumps.

The site is linked from many pages on Entergy Arkansas' website for a seamless and convenient customer experience. The residential program's online marketplace provides the convenience of a discounted purchase available anywhere in the state, including for customers who are in areas where no brick-and-mortar retailers participate in utility incentive programs. This means the utility can reach more of its customer base. Additionally, the utility can validate discounted purchases while gleaning valuable demographic information about who is shopping on the site. Marketing segmentation approaches included reach back campaigns to past participants as well as targeted campaigns to demographic groups that showed underperformance compared to national averages.

Figure 2.5.3 POPS Online Marketplace



In 2024, an online rebate application portal was once again available for electronic submission of rebate applications. Midyear this channel was included in the marketplace website to create an easy one stop shop for Entergy Arkansas customers. Any customer interested in submitting

its application digitally could do so for air purifier, dehumidifier, smart thermostat, and freezer rebates.

2.5.3 Program Budget, Savings and Participants

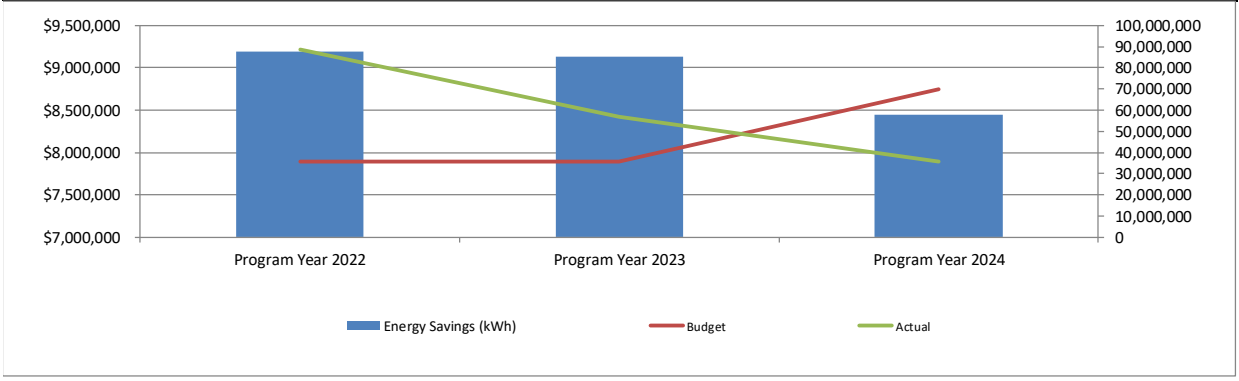
Table 2.5.3 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.5.3

Point of Purchase Solutions Budget, Energy Savings and Participants

Point of Purchase Solutions

	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	**Budget**	**Actual**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Actual**	**%**
Program Year 2022	$ 7,888,520	$ 9,214,545	117%	66,846,295	87,690,107	131%	9,934	13,906	140%	271,464	780,005	287%
Program Year 2023	$ 7,888,520	$ 8,417,611	107%	66,846,295	85,011,787	127%	9,934	13,142	132%	271,464	702,443	259%
Program Year 2024	**$ 8,751,342**	**$ 7,887,960**	**90%**	**55,525,079**	**57,949,096**	**104%**	**6,618**	**6,004**	**91%**	**266,316**	**310,782**	**117%**



Program Events & Training:

The 2024 annual Trade Ally Summit and Awards was held in-person in Little Rock. Distributors attending the summit heard from team leaders for all of the commercial programs in Entergy Arkansas' portfolio, as well as representatives from the engineering and marketing teams. Trainings on the PPC portal were held virtually and in-person throughout the year. A total of 3 trainings on commercial offerings and tools took place in 2024.

The Point of Purchase Solutions field team engaged with retail sales associates throughout the year, and the team led training sessions for 363 sales associates in participating retail locations, which focused on program participation, product technical details and processes to support

seamless implementation. Retailers were encouraged to display program products in prominent locations throughout the store.

2.5.4 Description of Participants

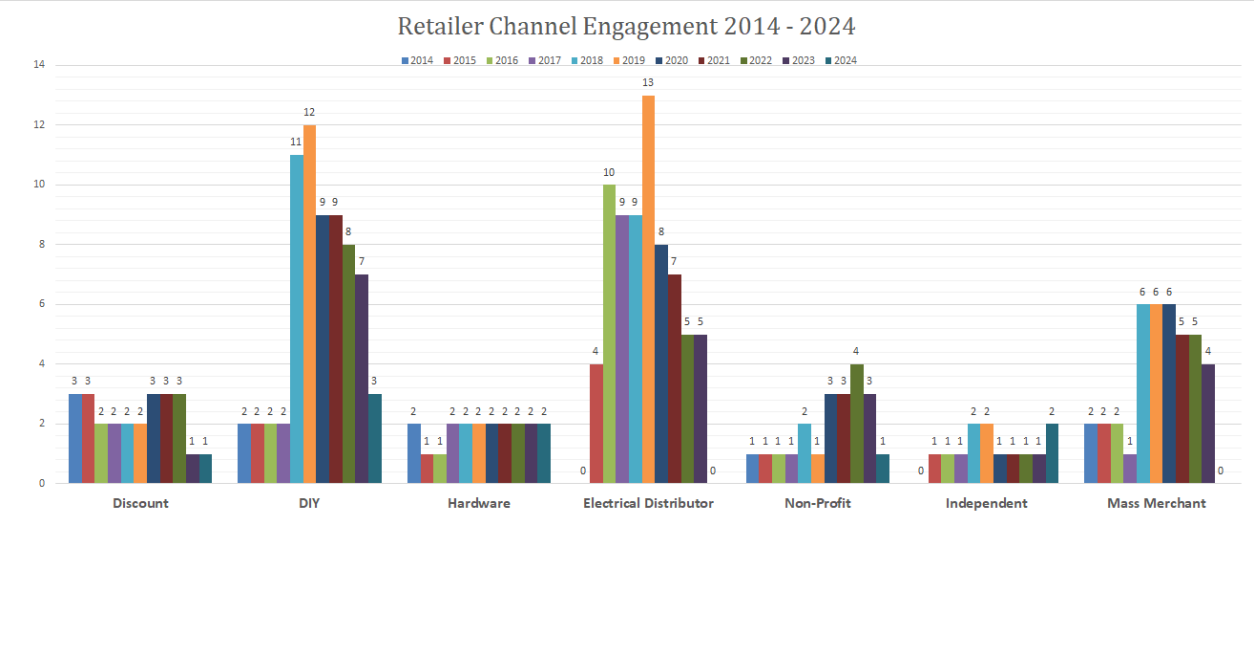
Participants included a diversified group of manufacturers, retail stores, electrical distributors and Entergy Arkansas customers across the state that purchased the discounted energy efficiency measures. In 2024, the program continued working with electrical distributors and independent retailers, such as small hardware stores and rural general stores, as well as Energy Federation Incorporated, the partner implementing the online marketplace for the first half of 2024. After June, CLEAResult implemented their own marketplace for Entergy Arkansas. Two electrical distributors which did not participate in the 2023 program participated in the 2024 program. City Electric Supply Company in Little Rock and Grainger were the participants in the commercial promotions in 2024, but not in 2023.

In 2024, the program continued a large focus on recruiting participation from market partners that could provide low cost measures to customers. Examples are Megalight, with the provision energy efficient advanced power strips and air purifiers at community events; and Greenlite, who provided APS and air sealing products to food banks for distribution to their constituent pantries.

For purposes of counting participants, the quantity of units subsidized for each energy efficiency measure is used, depending on the measure type. To illustrate, the estimate of participation for the program in 2024 is 310,782. This breaks down to 168,605 APSs, 9,614 air purifiers, 885 dehumidifiers, 725 smart thermostats, 9 pool pumps, 9 freezers, 56 heat pump water heaters, 8 aerators, 8 LED night lights and 526,780 weatherization products subsidized through the program. For the purpose of evaluating the program's reach, Entergy Arkansas looks at both the areas served, and the demographic targets reached by the various retailers participating in the program. A chart showing the changes in participation of retailers and distributors over the past ten years is shown below.

Table 2.5.4.1

Retailer Channel Engagement



2.5.5 Program Challenges and Opportunities:

In the fifth year of the POPS Program, recruitment was focused on solidifying existing relationships with retailers, manufacturers, community partner organizations and online fulfillment partners to more closely align with the way customers were making purchases in 2024. To address the cost and accessibility barriers for residential customers (particularly low-income and rural customers), the program continued a partnership with Feeding America, first established in 2020. The partnership with Feeding America is designed to bring APSs and air sealing products to those who utilize the food donation services offered by their partner agencies. Individual pantries at small organizations such as churches or local development agencies receive food and other goods from regional food banks, who warehouse and distribute to the pantries weekly. In 2024, the program continued to expand the geographic area for donations by reaching out and shipping products directly to food pantries located in rural parts of the state. This portion of the program incentivized 100,008 APS and 192,492 air sealing kits directly to pantries across the state. This is significant because, according to Feeding America, food

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insecurity rates are higher in rural areas (those primarily served by the direct to pantry program) than in suburban areas.

Table 2.5.5.1

Feeding America Demographics



In addition to traditional home improvement and mass merchant retailers, independent retailers also displayed rebate application forms and educated customers about the availability of pool pump, thermostat, air purifier, dehumidifier and freezer rebates. The program continued to lay the groundwork for expansion of non-lighting measures in future years.

Trade ally participation in the commercial portion of the program took a dip in 2024. Comparing 2023 to 2024, two new distributors were recruited and participated in the program, while five distributors who submitted reports in 2023 did not participate in 2024, for a net loss of two trade allies. The contribution to overall commercial energy savings by the five distributors who did not return in 2024 is 20%. As is the case in most commercial trade-ally-driven programs, a small percentage of those enrolled in the program submit the majority of the reported activity.

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Table 2.5.5.2

Energy Efficiency Measures Changes

Existing Measures	Removed from 2024 Program	Added to the 2024 Program
Commercial only: **LED bulbs and fixtures** **Electric Hand Dryers** **Variable Frequency Drives** **VSD Air Compressors** **Residential only:** **Advanced Power Strips** **Advanced Thermostats** **Room Air Purifiers** **Dehumidifiers** **Freezers** **Heat Pump Water Heaters** **ES Most Efficient Room Air Conditioners**	**Residential only:** **LED bulbs and fixtures** **Pool pumps**	**Commercial:** **No new measures added** **Residential:** **Aerators** **LED Night Lights**

EM&V efforts resulted in mostly positive results. The program received an overall NTG ratio of 87% due toNTG values decreasing in most measures. There was no change to the NTG ratio for smart thermostats, and the NTG ratio for air purifiers and retail APSs increased. All other measures had a decrease in the NTG ration. No spillover was identified for the program in PY

2024.

2.5.6 Planned or Proposed Changes to Program and Budget

In 2025, Entergy Arkansas will continue to explore new cost-effective measures, expansion of non-lighting measures already in the program and continue those direct outreach and product sales methods which proved successful in 2024. Focus will be placed on expanding the measures offered online and continuing to reach underserved customers with low or no cost product offerings.

In 2024, the program will continue utilizing a database for residential offerings, which has led to more automation and enhanced reporting capabilities and will build upon successful data management processes already in place, ensuring reported savings and evaluated savings are closely matched. This will also facilitate successful program planning for Entergy Arkansas.

The independent evaluator's 2023 recommendations for the program were all completed or are in progress. Additionally, all 2024 recommendations are in progress.

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2.6 Large Commercial and Industrial Program 2024

2.6.1 Program Description

The 2024 Large Commercial and Industrial Program ("C&I") is designed to provide Entergy Arkansas' C&I customers with technical assistance and financial incentives for implementation of efficiency measures. This program encourages C&I customers to maximize the efficiency of their facilities by upgrading their energy consuming equipment and improving their energy management practices.

Project energy savings may be quantified either through deemed savings calculations as outlined in the Arkansas TRM or through standard measurement and verification ("M&V") methodologies. In addition to financial incentives, the program offers technical assistance to participants and trade allies in the form of facility assessments, information on viable technologies, support in evaluating financial metrics and assistance in completing program documentation. Deemed savings estimates, as well as measurement and verification of savings for "custom" measures, are also provided.

Incentive rates remained the same for the 2024 program year. The program continued the same structure to allow for retroactive and excess incentives to be applied to projects in 2024. Retroactive incentives could be leveraged against other projects back to January of the previous year. Excess incentives could be leveraged against other projects and could carry forward to the end of the following year. The incentive rate structure is depicted in figure 2.6.1.1.

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Figure 2.6.1.1
2024 Large C&I Tiered Incentive Structure

Large C&I	1 measure	2 measures	3 measures	4+ measures	Cap
PC Power Management:	$0.10	$0.10	$0.10	$0.10	100%
Gaskets and Strip Curtains:	*Paid per LF (or SF) of damaged gasket/strip (contact program staff)*				100%
All other measures:	$0.14	$0.15	$0.16	$0.18	Up to 100%
*** Measures must be 30k kWh each for tier credit					
*** Measure credits for tiers are only retroactive to January of the previous program year					
*** Program Direct Install measures will count as only one tier, even if different end uses exist					
*** Excess incentives can be leveraged against other projects (up to the cap) and can carry forward to the end of the following year					
*** Retroactive incentives can be leveraged against other projects (up to the cap) back to January of the previous year					

2024 Large C&I Measure Categories

Eligible Measure Categories for Tier Credits:

- Lighting and On/Off Controls (Interior, Exterior, Specialty Lighting).
- Advanced Lighting Controls (Multi-step Controls, Dimming, Task Scheduled Controls, etc.).
- Comfort Cooling HVAC/Chiller Replacement.
- CoolSaver^{SM} Air Conditioner Tune-up.
- Chiller Tune-up.
- Retrofit VFD Drives for Air Handler Fans.
- Commercial Wi-Fi Thermostats.
- Building Automation Controls and Retro-Commissioning.
- Retro-Commissioning Lite (RCx Lite).
- Motor Replacement (including DC/AC Conversion and EC Motors).
- Motor Drive or VFD Upgrades.
- Computer Power Management (PCPM, Server Virtualization, Server Consolidation, Data Center UPS Upgrades).
- Commercial Refrigeration Upgrades (G/SC, ASHC, Zero Energy Doors, Night Covers, Open Cases to Solid Doors).

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- Direct Install (Aerators, PRSV, Showerheads, LEDs, Weather Stripping).
- Compressed Air Upgrades (Leak Fixes, Demand Side, Supply Side, Air Treatment, Storage, Distribution, VFD Driven Compressors, etc.).
- Industrial Controls and/or Compressed Air System Controls (Installation or Modification of Process or Compressor Controls).
- Industrial Pump/Fan Upgrades.
- Injection Molding System Upgrades (Heater Barrel upgrades, Heater Band Replacement, Heater Barrel Blankets, Injection Machine Cooling, etc.).
- Industrial Heating (Kilns, Ovens/Heaters, Drying Processes, etc.).
- Industrial Cooling (Process Chillers, Industrial Refrigeration, etc.).
- Other Industrial Process Upgrades (Non-Heating/Cooling).
- Behavioral Savings (Continuous Energy Improvement and Core Continuous Energy Improvement).
- All Other Measures (Envelope Measures, Data Center Hot Aisle/Cold Aisle, etc.) that could be measured and verified.

Projects submitted to this program may include prescriptive and/or custom measures; however, custom measures must pass a cost-effectiveness test to be eligible for incentives. This test takes the form of an analysis performed by Entergy Arkansas as shown in the following table.

Figure 2.6.1.2

2024 Large C&I Entergy Arkansas Cost-Effectiveness Test Example

PROJECT ==>	**Example Customer Lighting**	
A. PARTICIPANT COST TEST	**PASS**	**6.01**
B. RATEPAYER IMPACT MEASURE ("RIM") TEST	**PASS**	**2.33**
C. TOTAL RESOURCE COST ("TRC") TEST	**PASS**	**2.48**
D. PROGRAM ADMINISTRATOR COST ("PAC") TEST	**PASS**	**2.73**
Overall Assessment ==>	**PASS**	

The Large C&I program relies mostly on trade allies for direct marketing to eligible customers. Trade allies are contractors or distributors in the state who are educated about the program and

use the technical assistance and incentives to enhance their business offerings. In addition to trade allies, the program utilizes account managers on the implementation staff. The outreach efforts from these account managers continue to improve Entergy Arkansas' ability to market directly to participants as well as support the trade allies in their marketing efforts. These outreach efforts included trade ally outreach, presentations at public/professional organizations, outreach with Entergy Arkansas customer service staff and direct outreach via program staff.

Feasibility study co-funding was continued for C&I customers in the 2024 program year. This co-funding allows for some costs of energy efficiency studies to be offset by program incentives, thus making studies for complex projects more affordable. These studies are targeted to develop comprehensive solutions by identifying projects that might not otherwise happen due to the initial cost to investigate and quantify the energy savings potential. Feasibility co-funding rates for the 2024 program year remained the same, utilizing a tiered structure to promote increased custom savings per study (see Figure 2.6.1.3 below). Since this change, the program has seen increased participation in the feasibility study co-funding for higher custom savings (*i.e.*, compressed air and advanced lighting controls). The program's feasibility study co-funding was changed to incentivize more comprehensive audits and custom projects. Therefore, the new tiered structure rewards trade allies that provide more comprehensive feasibility studies that include custom savings. The payout structure remained at 40% payout upon the delivery of the feasibility study and the remaining 60% once the project is complete. This approach seeks to encourage the trade ally to follow through with completing the project(s). The percentage of co-funding available for studies remained at a maximum of 100% of study funding.

Figure 2.6.1.3

2024 Feasibility Tiered Incentive Table

Feasibility Study Savings**		
Min kWh	Max kWh	Incentive*
50,000	100,000	$3,000
100,001	200,000	$6,000
200,001	300,000	$9,000
300,001	500,000	$12,000
500,001	1,500,000	$15,000
1,500,001	5,000,000	$20,000

*Full payout amounts with a total feasibility budget of $300,000
*Payout 40% for study submission and the remaining 60% upon project completion for cost savings
**Must be M&V projects. Savings excludes "deemed" measures from the current version of the Arkansas TRM

2.6.2 Program Highlights

- Continuous Energy Improvement ("CEI") and CoolSaver℠ continued as measures in 2024. After a successful year in 2023, CEI contributed over 54 MWh in the fourth full year of implementation within the program. These measures had a successful year within the programs in 2024 in providing extra incentive tiering opportunities while contributing to more program comprehensiveness.
- Figure 2.6.2.1 indicates trade ally participation in the program. In 2024, 41 trade allies contributed to around 23% of the goal attainment.
- To show the continued program measure mix transformation, Figure 2.6.2.2 represents the measure mix from 2012, and Figure 2.6.2.3 represents the measure mix from 2024. This improved measure mix over the last eight program years points to the continued comprehensive gains within the program portfolio of measures.
- Figure 2.6.2.4 shows the geographical distribution of installed projects in the Large C&I program. Note that most of the Entergy Arkansas service area continues to have successful activity in the program.

Figure 2.6.2.1 - Large C&I Top Trade Ally Participation

Trade Ally	% of Total Savings	% of Total Incentives
Trade Ally 1	4.28%	7.80%
Trade Ally 2	4.27%	10.60%
Trade Ally 3	2.04%	2.68%
Trade Ally 4	1.44%	3.09%
Trade Ally 5	0.88%	1.50%
Trade Ally 6	0.72%	0.67%
Trade Ally 7	0.58%	0.99%
Trade Ally 8	0.58%	1.36%
Trade Ally 9	0.55%	0.94%
Trade Ally 10	0.53%	0.65%
Trade Ally 11	0.51%	0.87%
Trade Ally 12	0.50%	0.86%
Trade Ally 13	0.48%	0.44%
Trade Ally 14	0.48%	0.68%
Trade Ally 15	0.45%	0.76%
Trade Ally 16	0.44%	0.53%
Trade Ally 17	0.38%	0.65%
Trade Ally 18	0.37%	0.62%
Trade Ally 19	0.34%	0.45%
Trade Ally 20	0.34%	0.79%
Trade Ally 21	0.31%	1.46%
Trade Ally 22	0.29%	0.50%
Trade Ally 23	0.28%	0.24%
Trade Ally 24	0.19%	0.33%
Trade Ally 25	0.18%	0.22%
Trade Ally 26	0.14%	0.24%
Trade Ally 27	0.14%	0.24%
Trade Ally 28	0.13%	0.23%
Trade Ally 29	0.12%	0.08%
Trade Ally 30	0.11%	0.20%
Trade Ally 31	0.10%	0.09%
Trade Ally 32	0.09%	0.16%
Trade Ally 33	0.08%	0.14%
Trade Ally 34	0.07%	0.11%
Trade Ally 35	0.05%	0.08%
Trade Ally 36	0.04%	0.02%
Trade Ally 37	0.03%	0.06%
Trade Ally 38	0.02%	0.04%
Trade Ally 39	0.02%	0.03%
Trade Ally 40	0.01%	0.02%
Trade Ally 41	0.00%	0.06%

Figure 2.6.2.2

Large C&I Program Measure Mix (2012 kWh percentage)

For Comparison to 2024 Measure Mix Below in Figure 2.6.2.3.

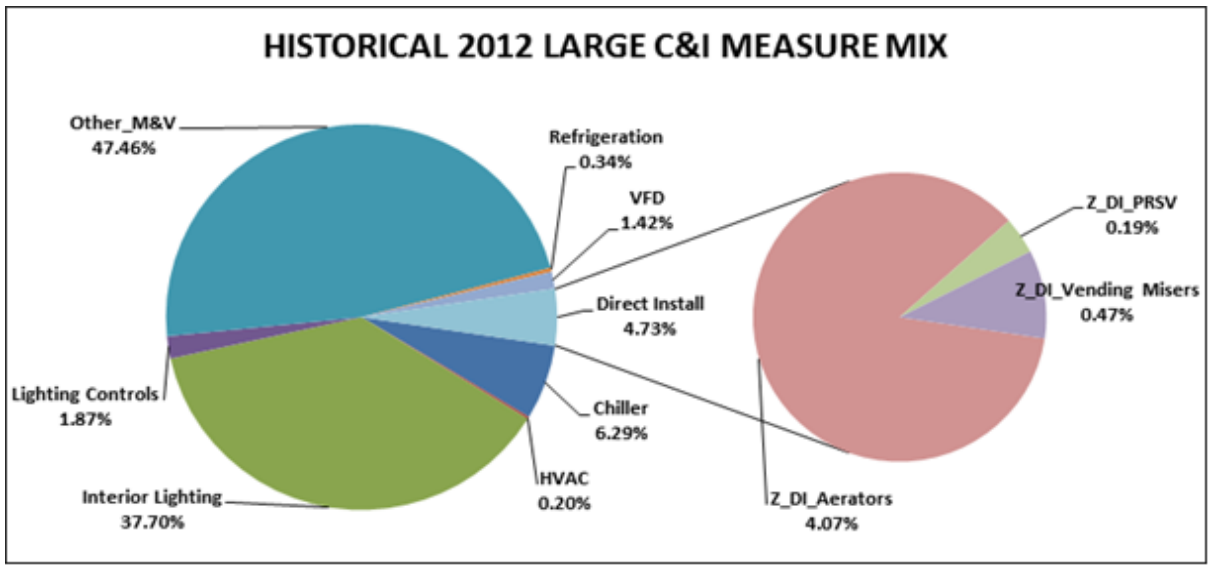
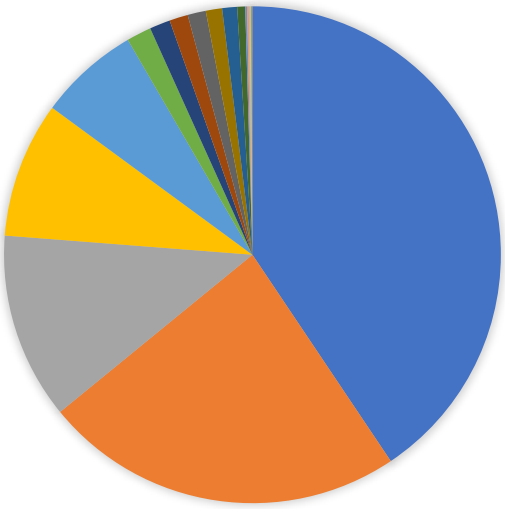


Figure 2.6.2.3

Large C&I Program Measure Mix (2024 kWh percentage)

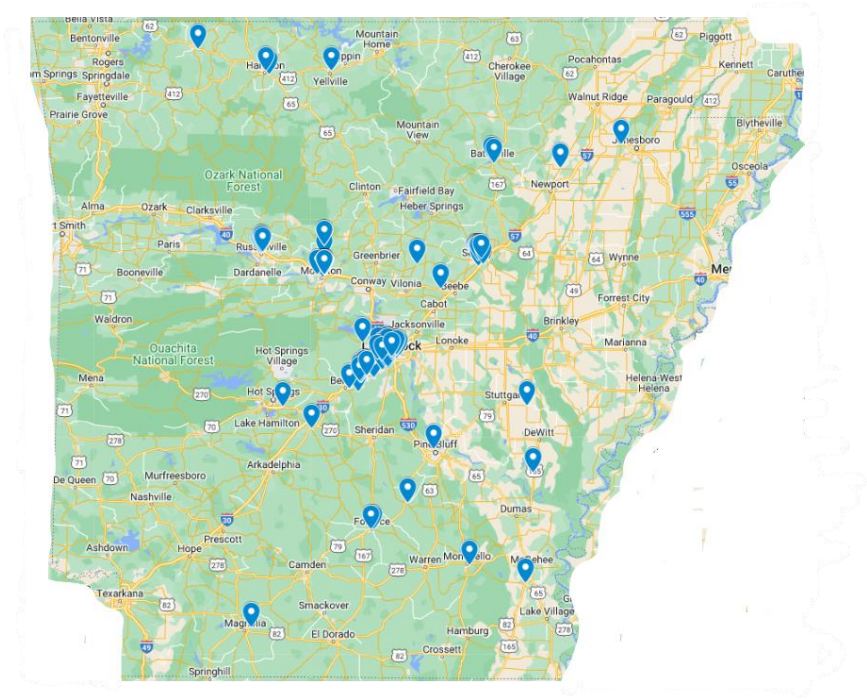


LCI Measure	kWh	%
Continuous Energy Improvement	54,329,154.91	51.19%
Custom	19,219,016.83	18.11%
New Construction	12,895,262.14	12.15%
Interior Lighting	10,096,355.41	9.51%
PTAC Sealing	1,972,929.10	1.86%
Variable Frequency Drives	917,102.60	0.86%
Compressor Replacement	915,426.81	0.86%
AC Tune Up	829,759.00	0.78%
Exterior Lighting	719,413.92	0.68%
Commercial Wi-Fi Thermostat	619,484.00	0.58%
Overhead Door Weather Stripping	572,536.24	0.54%
Chiller Replacement	494,347.52	0.47%
Refrigeration Door Gaskets	473,447.00	0.45%
Refrigeration Strip Curtains	459,459.34	0.43%
HVAC Replacement	416,622.27	0.39%
Lighting Controls	408,383.45	0.38%
Commercial Door Air Infiltration	242,063.85	0.23%
Electronically Commutated Motors for Refrigeration	192,618.52	0.18%
System Pressure Reduction	103,638.42	0.10%
Core CEI	93,861.09	0.09%
No Loss Condensate Drains	73,632.23	0.07%
Faucet Aerators	63,843.42	0.06%
Pre Rinse Spray Valves	14,441.42	0.01%
Evaporator Fan Controls	4,450.32	0.00%
Premium Efficiency Motors	2,064.27	0.00%
Commercial Showerheads	1,578.41	0.00%
PTHP Replacement	344.79	0.00%

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Figure 2.6.2.4

Distribution of Projects in Entergy Arkansas Service Area



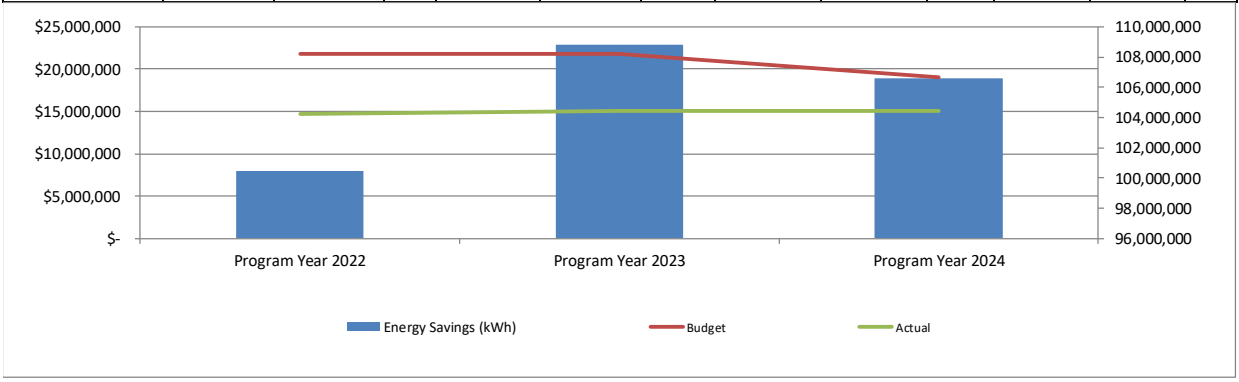
2.6.3 Program Budget, Savings and Participants:

Table 2.6.3 presents the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

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Table 2.6.3
Large C&I Solutions Program Budget, Savings and Participants

Large Commercial & Industrial Solutions												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 21,779,439	$ 14,752,019	68%	114,386,504	100,459,669	88%	18,197	16,999	93%	437	521	119%
Program Year 2023	$ 21,779,439	$ 15,016,623	69%	114,386,504	108,799,928	95%	18,197	12,257	67%	437	311	71%
Program Year 2024	**$ 19,010,281**	**$ 15,068,047**	**79%**	**105,503,573**	**106,560,257**	**101%**	**14,937**	**17,223**	**115%**	**473**	**371**	**78%**



2.6.4 Description of Participants

A participant is any non-residential Entergy Arkansas customer, which is not classified under Public Institutions Solutions, with a demand greater than or equal to 100 kW that has enrolled in the energy efficiency programs and will exert best efforts to approve, fund, and install projects during the program year. Participants were qualified and defined by a unique Entergy Arkansas account number. Implementation staff used the Entergy Arkansas assigned Business Partner ("BP") number to combine like participants for reporting in order to identify unique participants with multiple participating account numbers. Non-residential customers with a demand less than 100 kW, which are not classified under the Public Institutions Solutions, are encouraged to participate in the Small Business Solutions Program unless a custom measure or new construction is performed, in which case they would participate in this Large C&I program.

2.6.5 Program Challenges and Opportunities

The 2024 Large C&I program strived to deliver successful prescriptive and custom energy efficiency projects even during a challenging year. The challenges of supply chain issues decreased from 2023, but longer lead times for products still caused increased project timelines. The incentive structure continued to allow for tiered incentives and assisted customers in completing energy efficiency projects that may not have happened without the increased

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incentives. The feasibility study co-funding continued to be an avenue that trade allies used to evaluate facilities and develop complex projects that included compressed air measures. In 2024, co-funding was successful in helping in the development of additional compressed air measures and pump variable frequency drive (VFD) technology studies from multiple contractors that resulted in successful custom projects.

Implementation staff continued efforts to help SD customers be well informed when considering participation in the program. These efforts resulted in continued success of customers either requesting in the program after having filed for SD status or remaining in the program while having the option to file for SD status. These efforts are ongoing as implementation staff continues to communicate participation options to customers for the purposes of facilitating more informed decisions.

2.6.6 Planned or Proposed Changes to Program and Budget

The program will continue to allow the payment of back tier incentive credits to January of the previous program year. Excess bonus incentives, derived from projects that earned more incentive than the project cost, will continue to carry forward to December of the following program year instead of the current program year. Continuing to encourage multiple year participation and removing barriers for longer equipment ordering lead times and budget constrained projects will remain a program focus.

The program plans to raise incentive levels in PY2025, as they have remained unchanged for over five years. This increase aims to boost participation numbers in the coming program years.

2.7 Small Business Solutions

2.7.1 Program Description

Small Business Solutions is offered to commercial customers with less than 100 kW of peak demand. Certified participating contractors (trade allies) provide no-cost energy assessments to identify qualifying energy efficiency improvement projects and install cost-effective energy-saving equipment. Incentives for these projects are either passed directly to the customer on the trade ally's invoice or the customer may choose to receive the incentives directly. Trade allies or customers are paid from the incentive budget after reporting and QA/QC is completed. Small Business Solutions participants may also take advantage of no-cost direct install measures, including low-flow showerheads, low-flow faucet aerators, pre-rinse spray valves, packaged terminal air conditioners ("PTAC") seals, auto door closers and commercial door air infiltration measures (weather stripping).

2.7.2 Program Highlights

In 2024, EALs Trade Ally Network and continued direct install efforts contributed significantly to the success of the program. This Trade Ally Network consists of program trained and certified contractors, electrical distributors, manufacturer representatives and energy services companies that conduct no-cost energy efficiency assessments and complete energy efficiency projects through the program. Figure 2.7.2.1 below shows the location of the home offices of all 2024 trade allies in the network. Additionally, 29 different trade allies completed non-direct install projects in 2024. Figure 2.7.2.2 shows the approximate location of those projects.

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Figure 2.7.2.1 Location of 2024 Trade Ally Home Offices

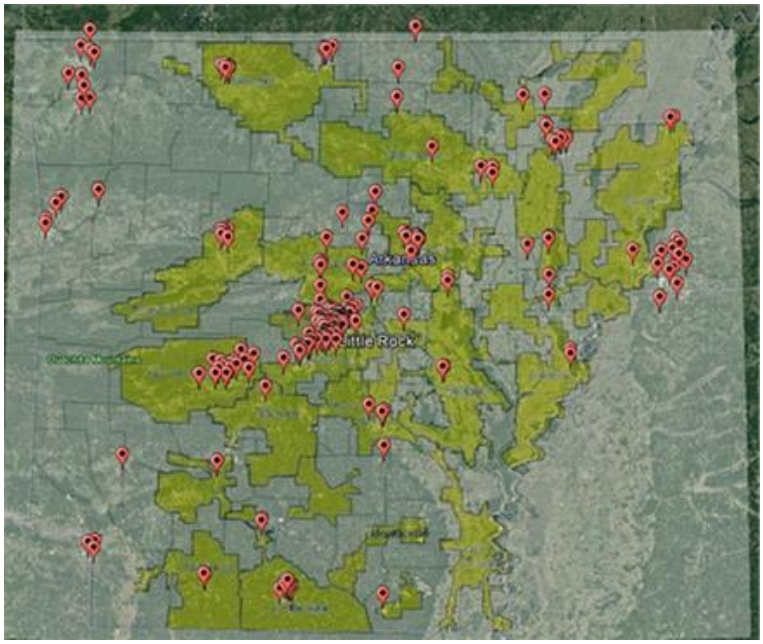
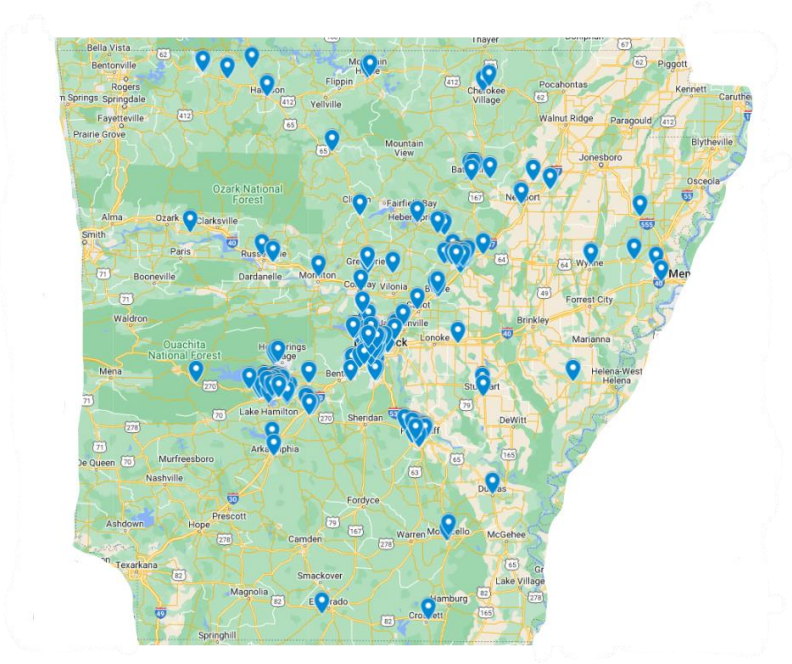


Figure 2.7.2.2 Distribution of Projects in Entergy Arkansas Service Area



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Table 2.7.2.3 represents 2024 Trade Ally achievement for non-direct install projects.

Table 2.7.2.3

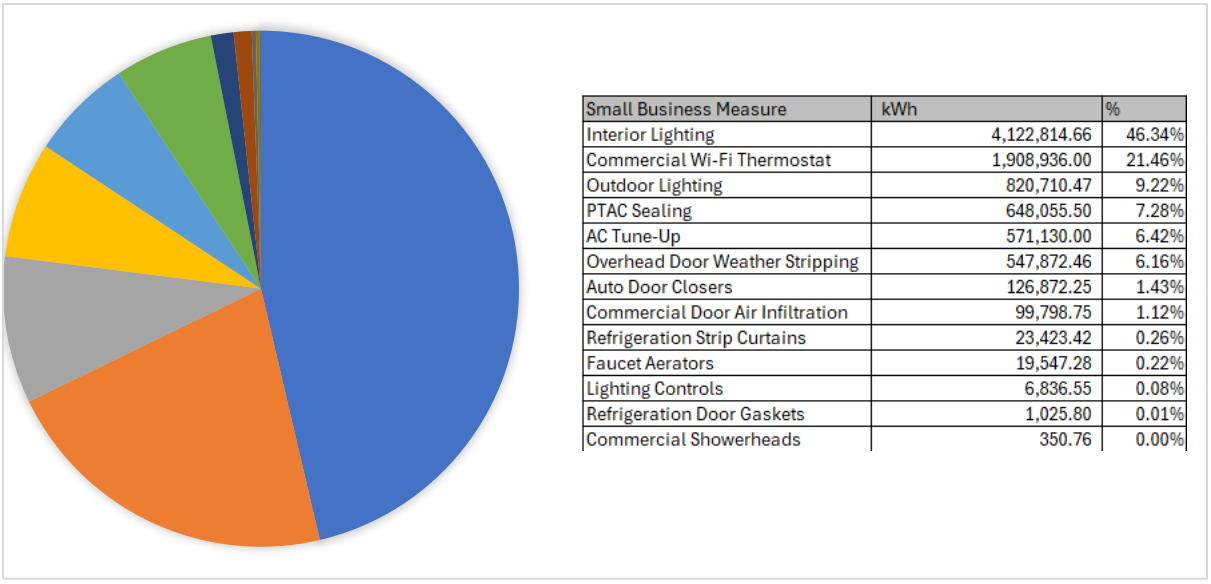
Trade Ally	% of Total Savings	% of Total Incentiv
Trade Ally 1	42.13%	45.51%
Trade Ally 2	12.50%	13.33%
Trade Ally 3	6.00%	6.49%
Trade Ally 4	4.75%	4.82%
Trade Ally 5	3.86%	4.17%
Trade Ally 6	2.41%	2.60%
Trade Ally 7	2.40%	2.57%
Trade Ally 8	2.33%	1.28%
Trade Ally 9	2.15%	2.48%
Trade Ally 10	1.98%	2.14%
Trade Ally 11	1.81%	1.28%
Trade Ally 12	1.77%	1.91%
Trade Ally 13	1.54%	1.32%
Trade Ally 14	0.91%	0.98%
Trade Ally 15	0.72%	0.78%
Trade Ally 16	0.56%	0.54%
Trade Ally 17	0.53%	0.58%
Trade Ally 18	0.34%	0.37%
Trade Ally 19	0.33%	0.35%
Trade Ally 20	0.29%	0.25%
Trade Ally 21	0.29%	0.22%
Trade Ally 22	0.28%	0.48%
Trade Ally 23	0.25%	0.27%
Trade Ally 24	0.16%	0.18%
Trade Ally 25	0.13%	0.14%
Trade Ally 26	0.09%	0.10%
Trade Ally 27	0.07%	0.09%
Trade Ally 28	0.05%	0.02%
Trade Ally 29	0.02%	0.06%

The Small Business Solutions Program had a filed savings target of 8,754 MWh for the 2024 program year. Small Business Solutions achieved 8,754 MWh in evaluated net energy savings.

Direct installation of low-flow faucet aerators, pre-rinse spray valves, PTAC seals, auto door closers, commercial door air infiltration (weather stripping), overhead door air infiltration and shower heads provided more opportunities to increase measures and reach more businesses through lighting assessment leads for trade allies.

Figure 2.7.2.4

Small Business Solutions Measure Mix (2024 kWh)



Small Business Measure	kWh	%
Interior Lighting	4,122,814.66	46.34%
Commercial Wi-Fi Thermostat	1,908,936.00	21.46%
Outdoor Lighting	820,710.47	9.22%
PTAC Sealing	648,055.50	7.28%
AC Tune-Up	571,130.00	6.42%
Overhead Door Weather Stripping	547,872.46	6.16%
Auto Door Closers	126,872.25	1.43%
Commercial Door Air Infiltration	99,798.75	1.12%
Refrigeration Strip Curtains	23,423.42	0.26%
Faucet Aerators	19,547.28	0.22%
Lighting Controls	6,836.55	0.08%
Refrigeration Door Gaskets	1,025.80	0.01%
Commercial Showerheads	350.76	0.00%

2.7.3 Program Budget, Savings and Participants

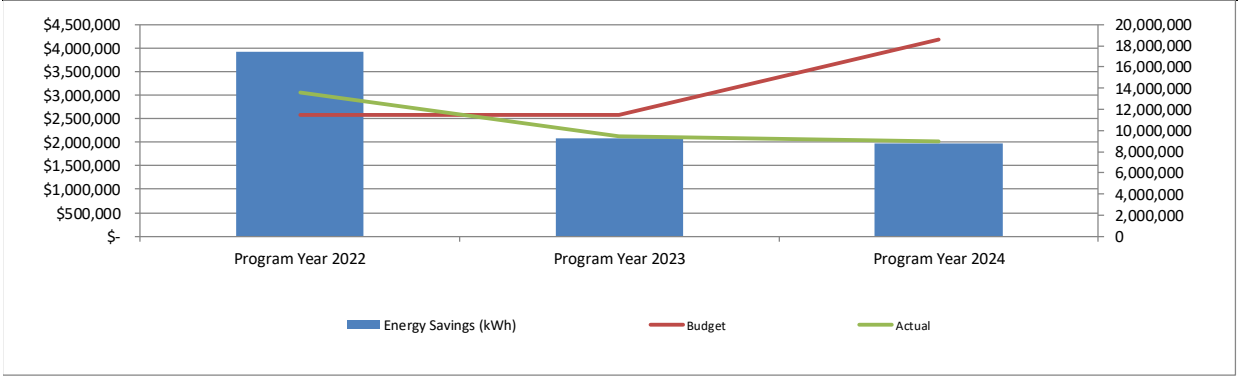
Table 2.7.3 shows the program budget, annual energy savings and number of participants from Workbook Table 5, as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

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Table 2.7.3

Small Business Solutions Budget, Savings and Participants

Small Business Solutions												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 2,580,679	$ 3,048,245	118%	13,871,485	17,403,625	125%	1,740	2,782	160%	424	711	168%
Program Year 2023	$ 2,580,679	$ 2,122,508	82%	13,871,485	9,221,327	66%	1,740	1,507	87%	424	469	111%
Program Year 2024	**$ 4,172,561**	**$ 2,016,542**	**48%**	**17,147,012**	**8,754,457**	**51%**	**2,874**	**1,467**	**51%**	**740**	**470**	**64%**



Program Events & Training:

The Small Business Solutions Program conducted 58 recruitment and training events in the 2024 program year. The training events included instructions on program participation, calculator training, trade ally enrollment for training on field inspections and program best practices/processes. See the Annual Report Workbook for training details.

Providing adequate and effective training is essential to the success of the trade allies in the Small Business Solutions Program. In addition, it is important to provide trade allies with proper ongoing support and efficient processing of incentives.

2.7.4 Description of Participants

A program participant is defined as any Entergy Arkansas commercial customer with less than 100 kW of peak demand that receives electric service from Entergy Arkansas. Participants were qualified and defined by a unique Entergy Arkansas account number. Implementation staff also estimated unique Small Business Solutions Program participants with multiple participating account numbers for reporting to be approximately 470.

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2.7.5 Program Challenges and Opportunities

With market saturation increasing in 2024, the challenge will be to provide more measures to the small business market sector while maintaining cost-effectiveness and comprehensiveness. Therefore, the development of more measures will be important for continued success beyond 2024. This challenge will be met through focusing staff resources to provide more development for new measures, which has already begun. Direct installation has again proven to be a great success in the Small Business Solutions Program for 2024.

2.7.6 Planned or Proposed Changes to Program and Budget

The program plans to raise incentive levels in PY2025, as they have remained unchanged for over five years. This increase aims to boost participation numbers in the coming program years.

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2.8 Public Institutions Solutions

2.8.1 Program Description

The Public Institutions Solutions Program provides technical assistance, energy planning recommendations and financial incentives to public entities (state, federal, cities, counties and public/private schools/colleges) for the installation of cost-effective energy efficiency measures. The program helps public entities operate their buildings more efficiently by explaining the technical and financial benefits of investing in energy efficiency, developing a plan to make energy efficiency improvements and providing support in completing projects.

The program provides technical assistance, manages program incentive funds, verifies that the savings claimed through the program are accurate and appropriate, and uses appropriate M&V methods to prove savings (where necessary). Energy Benchmarking and Energy Master Planning Workshops are provided for participants specified within the program.

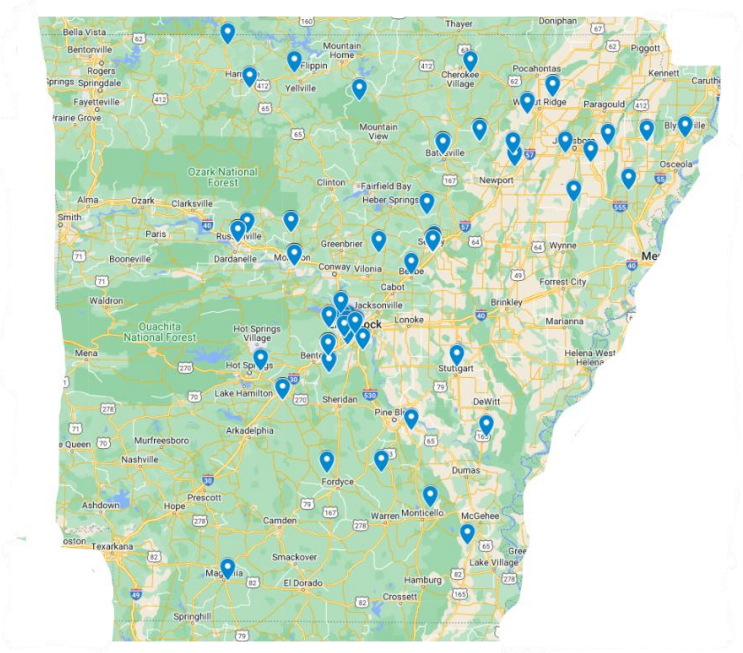
Whether retrofitting an existing building or incorporating energy efficiency technologies into new construction, the program helps participants identify and implement cost-effective projects that will help them facilitate using energy more efficiently. After upgrades are completed and verified, the program provides cash incentives for projects that save energy. The projects submitted under the Public Institutions Solutions Program can be single measure projects through a trade ally or comprehensive projects, including multiple, complex measures which require M&V.

2.8.2 Program Highlights

- Public Institutions Solutions achieved 15,695 MWh in gross energy savings, which is over 100% of the 2024 kWh savings goal. The program was able to shift kWh savings in order for other programs to overachieve on total savings goals.
- Program Participation – The Public Institutions Solutions Program had customer participation throughout the Entergy Arkansas service area. Entergy Arkansas developed a map showing that the program achieved savings in a geographically diverse range of participants. (See map in Figure 2.8.2.1).

Figure 2.8.2.1

Distribution of Projects in Entergy Arkansas Service Area

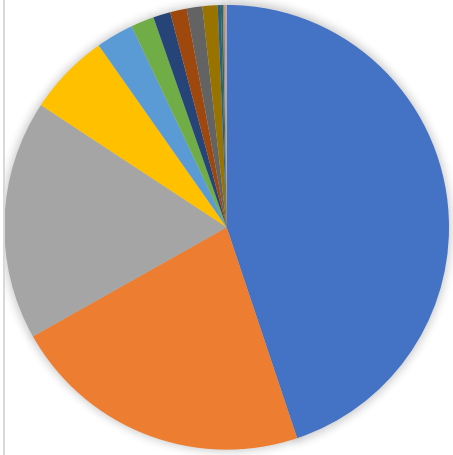


- Benchmarking and Energy Master Planning - The Public Institutions Solutions Program benchmarked 27 buildings/sites for three participants using EPA's Portfolio Manager Tool. Energy Master Planning workshops were conducted for three participants to include improved learning environments, reducing energy expenditures, boosting the local economy (through upgrade projects) and enhancing community relations. Entergy Arkansas analyzed the efforts of benchmarking services to encourage participants to implement more energy efficiency upgrades in their facilities. The results of this analysis showed that those who participate in benchmarking services provided by the program implement, on average, 1.5 times more energy efficiency upgrades than those that do not participate.

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Figure 2.8.2.2

Public Institutions Solutions Measure Mix (2024 kWh)



CitySmart Measure	kWh	%
Commercial Wi-Fi Thermostat	7,162,096.00	44.87%
Continuous Energy Improvement	3,507,311.83	21.97%
Interior Lighting	2,779,847.39	17.41%
AC Tune-Up	956,073.00	5.99%
New Construction	435,705.77	2.73%
Custom	268,736.07	1.68%
Lighting Controls	199,621.78	1.25%
HVAC Replacement	192,480.61	1.21%
Chiller Replacement	181,830.53	1.14%
Exterior Lighting	175,770.24	1.10%
Refrigeration Strip Curtains	36,319.81	0.23%
Variable Frequency Drives	23,950.07	0.15%
Overhead Door Weather Stripping	19,242.68	0.12%
Core CEI	16,773.39	0.11%
Refrigeration Door Gaskets	6,688.00	0.04%

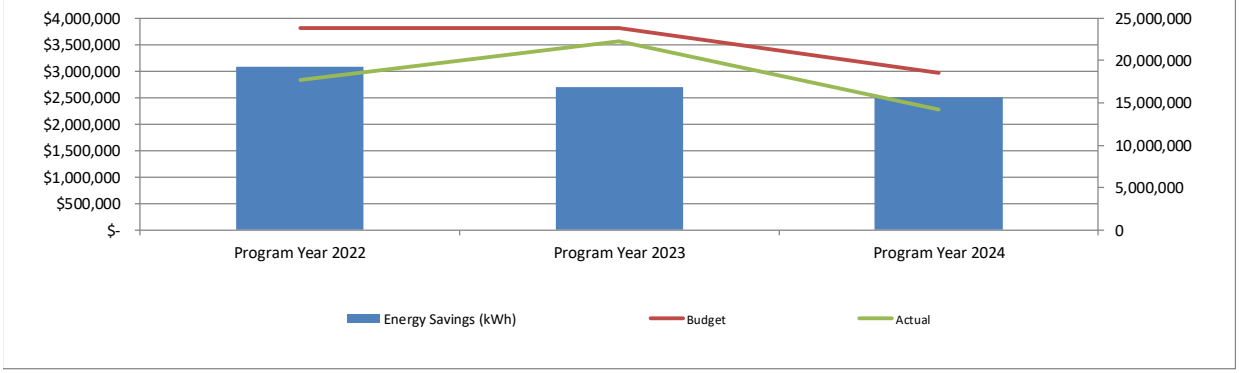
2.8.3 Program Budget, Savings and Participants

Table 2.8.3 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.8.3

Public Institutions Solutions Budget, Energy Savings and Participants

Public Institutions Solutions												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 3,805,633	$ 2,840,708	75%	24,661,483	19,224,703	78%	5,883	2,731	46%	61	263	431%
Program Year 2023	$ 3,805,633	$ 3,572,008	94%	24,661,483	16,832,595	68%	5,883	3,176	54%	61	216	354%
Program Year 2024	**$ 2,964,697**	**$ 2,269,903**	**77%**	**14,514,891**	**15,695,269**	**108%**	**2,850**	**2,435**	**85%**	**200**	**178**	**89%**



Program Events & Training:

In 2024, the Public Institutions Solutions Program conducted Energy Master Planning Workshops for three customers and benchmarked 27 buildings/sites. Energy Master Planning Workshops addressed energy management issues and obstacles and questions common to schools, cities and counties to address the key focus areas of planning and decision making, evaluation and monitoring, funding energy efficiency, facility operations and energy awareness. In addition, these workshops presented energy performance benchmarking analysis to assist public entities in benchmarking their facility performance against other similar facilities.

Program staff also conducted presentations across various locations and participant face-to-face meetings. Program presentations were made, and information booths were set up at several key events and several other conferences. See more training details in the Standardized Annual Report Workbook.

2.8.4 Description of Participants

A participant is defined as any Entergy Arkansas customer that is a public and/or private entity customer (for example, federal/state buildings, K-12 schools, higher education institutions, and

municipalities) that receives retail electric service from Entergy Arkansas. Participants are counted by tax ID number, which is represented by Business Partner Number in Entergy Arkansas' account data. Each participant can include multiple account numbers, projects and measures. Participants were qualified and defined by a unique Entergy Arkansas account number.

2.8.5 Program Challenges and Opportunities

The 2024 Program Year offered many opportunities and challenges. Customers in this market segment continue to be challenged by the economic climate and oftentimes find it difficult to fund projects. Entergy Arkansas worked with customers to identify short-term solutions, such as direct install and lighting solutions, and long-term solutions, including custom M&V projects, in order to gain rapid returns and savings that will persist.

Entergy Arkansas also continues to educate customers on other financial options, such as:

- Lease Agreements that offer low-rate (often tax-exempt) funding which allows financing of capital equipment over longer periods of time (10+ years) by utilizing "operating cost" dollars.
- Bond Issues through a taxpayer (public) approved mechanism that funds capital improvements over time at low rates (approvals can take substantial time); and
- Performance contracting through a guaranteed or shared savings agreement with a performance contractor that funds capital improvements over a period of time using energy and/or operational savings.

Developing more behavioral energy efficiency projects for this program remains important to continued success beyond 2024. Program staff is working to recruit additional customers to implement future behavioral opportunities.

2.8.6 Planned or Proposed Changes to Program

The program will continue to allow the payment of back tier incentive credits to January of the previous program year. Excess bonus incentives, derived from projects that earned more incentive than the project cost, will continue to carry forward to December of the following program year instead of the current program year. Continuing to encourage multiple-year

participation and removing barriers for longer equipment ordering lead times and budget constrained projects will remain a program focus.

The program plans to raise incentive levels in PY2025, as they have remained unchanged for over five years. This increase aims to boost participation numbers in the coming program years.

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2.9 Agricultural Energy Solutions Program

2.9.1 Program Description

The Agricultural Energy Solutions Program is designed to reduce energy usage among agribusiness owners in Entergy Arkansas' service territory through custom and prescriptive incentives, as well as farmer energy efficiency and agricultural supplier education. The program seeks to accomplish these goals by lowering the barriers within this sector, such as: the lack of easy access to qualified vendors and installers, the lack of information and awareness of the benefits of participation, and financial incentives to overcome the first cost barriers of energy efficiency measures.

2.9.2 Program Highlights

- Saved 7,974 gross MWh in 2024 with a 100% realization rate and a net-to-gross ratio of 0.99, resulting in 7,894 MWh net energy savings.
- Achieved 0.83 gross MW and 0.82 net MW savings in 2024 with a realization rate of 100%.
- A total of 3,568 measures were incentivized for 17 participants. In 2024, the program continued to build and maintain relationships with numerous agricultural businesses, trade allies, contractors, government agencies, row crop farmers, indoor horticulture farmers and poultry farmers across Arkansas. These relationships heightened program awareness throughout the Entergy Arkansas service territory and were instrumental in achieving the 2024 MWh savings. Trade ally outreach generated 41.18% of program participation totals, program management generated 29.41%, farmer to farmer word-of-mouth generated 17.65%, and the Entergy Solutions website generated 5.88%. See Figure 2.9.2.1 for a breakdown of the program outreach and Figure 2.9.2.2 for a geospatial map of farms that participated in the Agricultural Program in 2024.

Figure 2.9.2.1 Referrals 2024

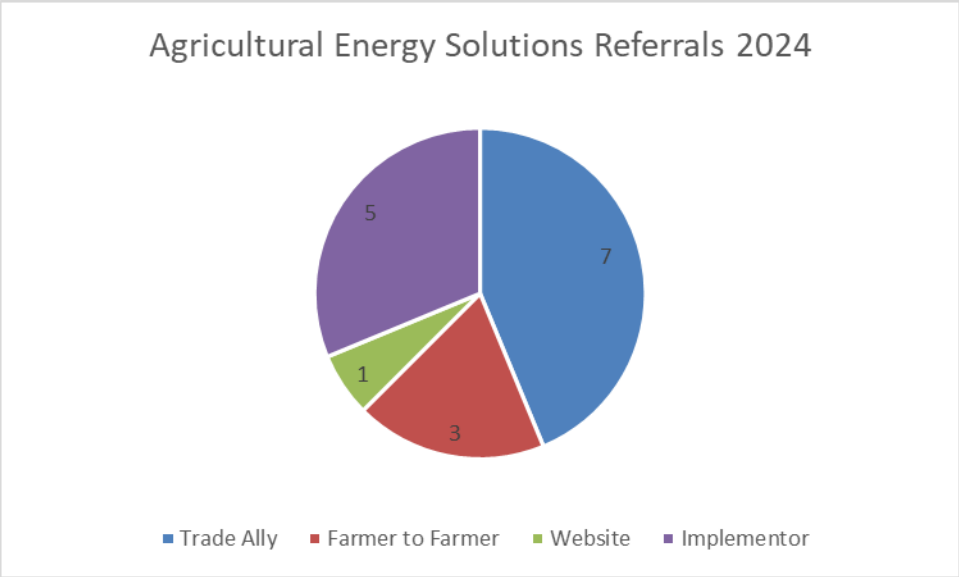
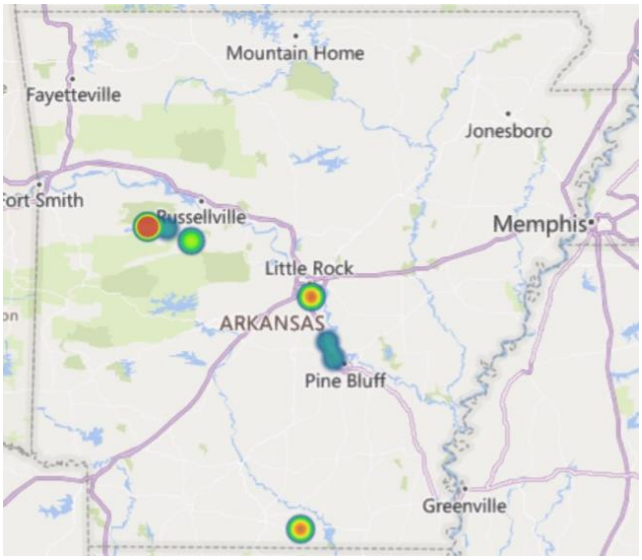


Figure 2.9.2.2 2024 Participants



- In 2024, 17 applications were received, and all participated in Quality Control (QA/QC) with a pass rate of 100%. This consisted of 9 pre-inspections and 17 post-inspections.

2.9.3 Program Budget, Savings and Participants

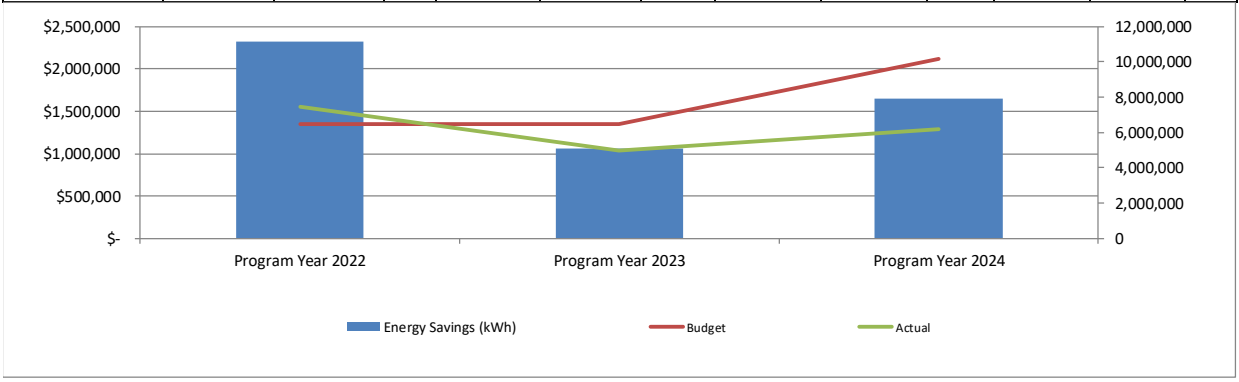
Table 2.9.3 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.9.3

Agricultural Energy Solutions Program Budget, Savings and Participants

Agricultural Energy Solutions

	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	**Budget**	**Actual**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Evaluated**	**%**	**Plan**	**Actual**	**%**
Program Year 2022	$ 1,352,798	$ 1,552,719	115%	5,998,345	11,142,521	186%	928	2,893	312%	206	15	7%
Program Year 2023	$ 1,352,798	$ 1,033,381	76%	5,998,345	5,111,279	85%	928	1,930	208%	206	6	3%
Program Year 2024	**$ 2,121,871**	**$ 1,286,225**	**61%**	**6,651,727**	**7,894,088**	**119%**	**1,050**	**817**	**78%**	**56**	**17**	**30%**



2.9.4 Description of Participants

Any agricultural customer that receives electric service from the Company is eligible for the Agricultural Energy Solutions Program at its Entergy Arkansas serviced facilities. The following rate codes are eligible:

- Agricultural Pumping (“AP”)
- General Farm Service (“GFS”)
- Small General Service (“SGS”) customers that are classified as an agricultural business and
- Large General Service (“LGS”) customers that are classified as an agricultural business.

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For purposes of this program, a participant is defined by a single Federal Tax ID number. Organizations with multiple locations are considered a single participant, regardless of how many Entergy Arkansas account numbers they may have.

2.9.5 Program Challenges and Opportunities

Opportunities:

Savings opportunities are available for the agricultural sector, but there are challenges and market barriers to overcome to accomplish these savings. The major challenges associated with the program include:

- The agricultural sector is hard to reach because this sector relies more on a word-of-mouth approach rather than traditional mass marketing, and it can be difficult to gain trust in the tight-knit agricultural community.
- Weather conditions impact crop production, which creates financial hardship for the farm. This hardship can cause limited funding for energy efficiency investments.
- The agricultural sector is seasonal and requires precise timing to conduct proper marketing efforts.
- Energy efficiency improvements can be difficult for farmers leasing land. Typically, both the farmer and landowner must agree on energy efficiency improvements. Split decisions can delay or terminate projects. Even with financial incentives, some farmers lack funds to invest in energy efficiency improvements.
- Biosecurity procedures are implemented in the poultry market to reduce the risk of transmitting infectious diseases due to outbreaks. Some protocols restrict site access to prevent transmittal of the disease from farm to farm. This can delay our outreach efforts and other field activities such as QA/QC.

Challenges:

Although there are many challenges, the program implemented strategies to overcome these barriers. Employee experience in agriculture is very important; farmers are more willing to listen and trust someone with expertise and to whom they can easily relate. These barriers are being overcome by hiring an account manager with a strong agricultural background. The manager accessed the rural communities and gained the customers' trust through successful one-on-one meetings with farmers and the ability to relate to the farmers on a personal level.

Entergy Arkansas also developed solutions for the seasonal marketing barriers associated with agriculture. Row crop farmers are extremely busy during the planting and harvesting season. Marketing efforts were adjusted accordingly to address this issue. Marketing efforts now focus on row crop farmers during the winter and early spring months, and poultry farmers during the summer and fall months.

EM&V Recommendations:

- Continue to work collaboratively with the EM&V team and seek review of large or unique custom projects.
- Collect heating and cooling documentation when present on-site.
- Clearly define program requirements to determine if retrofit or new construction methodology should be used. If unclear which method should be used, consult the EM&V team to discuss and reach an agreement.
- Define additional measure descriptions to ArchEE, Entergy Arkansas' energy efficiency database, to clarify measure type as the program expands with new measure offerings beyond lighting.
- Monitor the time it takes for incentive checks to be sent.
- Increase internal QA/QC practices.

2.9.6 Planned or Proposed Changes to Program and Budget

The Agricultural Energy Solutions Program will change its net energy savings goal and incentive budget for 2025 to 7,068 MWh and $1,361,683.00 respectively.

2.10 Residential Direct Load Control

2.10.1 Program Description

The Residential Direct Load Control program, referred to as the Summer Advantage Program, is designed to reduce peak electricity demand at the point of use in Entergy Arkansas' service territory. A Digital Control Unit ("DCU") that is installed on or near the customer's outside air conditioning or heat pump unit allows for cycling of the outside unit during peak electricity demand periods reducing electricity usage. The inside fan is allowed to operate normally to circulate cool air while the outside unit is cycled off.

Customers have a choice between 50% cycling and 75% cycling. Customer incentives are based on the customer's choice of 50% cycling or 75% cycling. All Summer Advantage participants will receive two incentive payments: an installation incentive and an annual incentive. Customers who are selected for the M&V program will receive an additional annual incentive based on their participation rate.

- Installation incentive. Upon successful installation of the DCU, the customer receives an installation incentive based on participation rate; those at the 50% participation rate receive $25 and those at the 75% participation rate receive $40.
- Annual incentive. The annual incentive is offered to Summer Advantage customers as recognition for their participation in the program throughout the year. These incentives may be prorated based on the customer's participation during control season. Customers who have full participation at the 50% rate are eligible to receive a total of $25, and those at the 75% rate are eligible to receive a total of $40.

Customers who have more than one air conditioner or heat pump will be paid an installation and an annual incentive for each outside unit that is installed in the program.

2.10.2 Program Highlights

2024 was a very successful year for the Summer Advantage Program and included the following highlights:

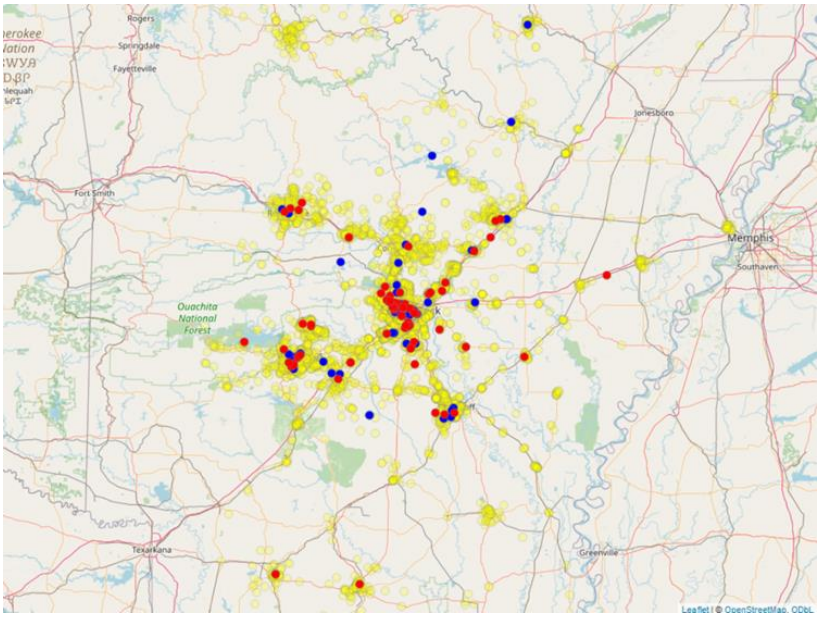
- Demand savings results during the control seasion provided a 15-minute maximum of 14.1 MW of estimated gross demand response load reduction.

- In the 2024 Summer Advantage Program curtailment season, there were a total of four curtailment events including one test event. The maximum hourly reduction for the Summer Advantage program for the season based on qualifying event hours was 1.09 kW/device. This reduction corresponds to the actual reduction as was obtained from the MISO baseline with weather adjustment method. This leads to 14.11 MW of gross demand response reduction based on the total installed end points of 12,944 throughout the Entergy Arkansas service area.
- Itron LTE CENTRON Meter Monitoring and Verification system provided reliable and accurate kW data. This system combines cellular meter hardware, a proprietary curtailment algorithm, and an Itron Digital Control Unit (DCU) to provide load reduction data for analysis of energy curtailment events.

Geographical Presence:

Figure 2.10.2 shows a map of the Summer Advantage Load Control Program participant area and M&V site locations. Yellow colored circles show the 2024 Summer Advantage population installations, while the red (50% Curtailment strategy) and blue (75% Curtailment Strategy) circles represent the M&V sites.

Figure 2.10.2
Summer Advantage Participants



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Independent Evaluator Reports:

Key Findings:

- An M&V sample is maintained by Itron, with 120 participants having interval data loggers that provide five-minute readings of equipment kW.
- The M&V sample is structured to represent the program population and provides data to calculate savings.
- In PY2024, the Summer Advantage Direct Load Control program achieved 13.6 MW in gross demand savings.
- The EM&V team found that the approach to using the M&V sample deployed on direct control units in demand response curtailment calculations is appropriate.
- The evaluated savings using the MISO-based calculations differed slightly from Itron's calculations due to rounding differences in calculating per-device savings. These differences resulted in a realization rate of 96.7 percent.

EM&V Recommendations:

1. Consider analyzing the two curtailment strategies separately.
    a. *Key Finding:* The two curtailment strategies (50 and 75 percent) are likely to produce different demand reductions. Analyzing these two groups separately would provide insight into the extent of potential savings achievable through a single curtailment strategy.
    b. *Resolution:* This additional analysis has been discussed with Entergy Program Management for possible implementation in Itron’s 2025 Annual Impact Report.
2. Incorporate all potential event hours into weather regressions.
    a. *Key Finding:* Itron’s evaluation used data from 2 pm to 8 pm across the summer. Some demand response events begin at 1 pm; therefore, incorporating observations from 1 pm could provide a more accurate counterfactual baseline.
    b. *Resolution:* Itron currently utilizes data collected from 12:00 PM to 7:00 PM which are the “Turnkey Program Availability Hours.”
3. Exclude event days from weather regression.
    a. *Key Finding:* Excluding event days from baselines is standard evaluation practice; including data from event days creates a potentially inaccurate baseline.
    Resolution: Event days were excluded from the weather regression in Itron’s 2024 Annual Impact Report.

Planned Actions:

- Customers who are currently enrolled in the Summer Advantage Program will receive a pre-season letter describing the program and providing contact information for enrollment and incentive questions.

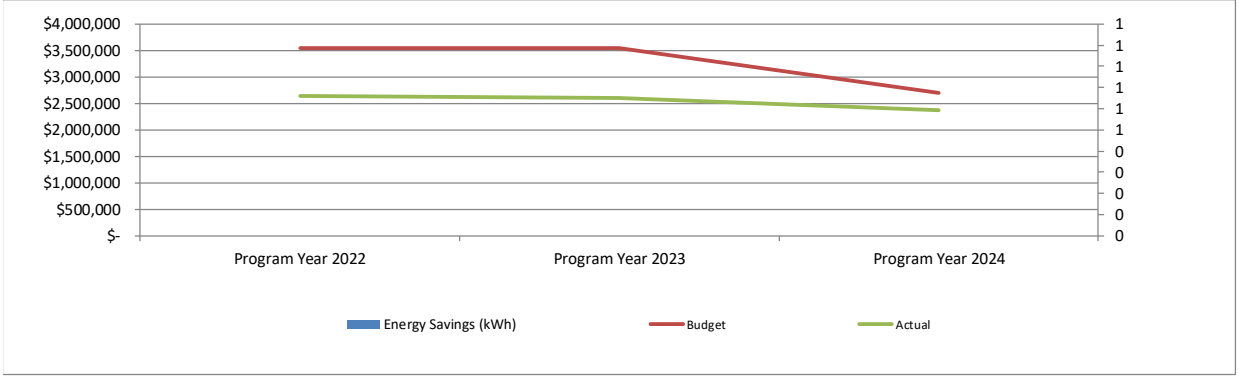
2.10.3 Program Budget, Savings and Participants

Table 2.10.3.1 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.10.3.1

Residential Direct Load Control Program Budget, Savings and Participants

Residential Direct Load Control													
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 3,547,988	$ 2,643,301	75%	0	0	-	29,009	15,371	53%	17,797	15,685	88%
Program Year 2023	$ 3,547,988	$ 2,595,874	73%	0	0	-	29,009	18,536	64%	17,797	14,393	81%
Program Year 2024	**$ 2,698,350**	**$ 2,372,588**	**88%**	**0**	**0**	**-**	**10,506**	**13,644**	**130%**	**10,982**	**12,944**	**118%**



Program Events & Training:

All Itron field team members are required to meet annual OSHA compliance training.

1. Back Safety and Injury Prevention
2. Bloodborne Pathogens Awareness
3. Electrical Safety
4. HVAC Specific Safety and Regulatory

5. First Aid: Basic
6. Ladder Safety
7. Lockout/Tagout
8. Lockout/Tagout for Authorized Persons
9. NFPA 70E Electrical Safety in the Workplace
10. PPE: Personal Protective Equipment
11. Slips, Trips, and Falls
12. Sprains and Strains
13. Heat Stress Recognition and Prevention

Program Savings:

For the 2024 curtailment season, Entergy Arkansas called a total of four curtailment events including one test event on June 3rd. The results are shown in Table 2.7.3.2 below. For this program, the entire M&V population was curtailed. The maximum hourly reduction for the Summer Advantage program for the season based on qualifying event hours was 1.09 kW/device. This reduction corresponds to the actual reduction as was obtained from the MISO baseline with weather adjustment method. This leads to 14.11 MW demand response reduction based on the total installed end points of 12,944 throughout the Entergy Arkansas service area.

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Table 2.10.3.2 - Summary of Curtailment Events

Date	Start time (CDT)	End time (CDT)	Itron baseline temperature	EM&V team baseline temperature	Itron weather-adjusted reduction (per-device kW)	EM&V team weather-adjusted reduction (per-device kW)
6/3/2024	13:00	14:00	83.6	83.1	-0.21	-0.2
6/14/2024	15:00	16:00	85.6	85.7	0.89	0.83
6/14/2024	16:00	17:00	85.5	85.5	0.68	0.63
6/14/2024	17:00	18:00	84.8	84.8	0.7	0.65
6/14/2024	18:00	19:00	83.6	83.6	0.56	0.52
7/31/2024	15:00	16:00	86.5	86.5	0.91	0.84
7/31/2024	16:00	17:00	87.1	87.1	0.67	0.61
7/31/2024	17:00	18:00	86.2	86.2	0.71	0.65
7/31/2024	18:00	19:00	84.7	84.7	0.65	0.59
8/27/2024	**16:00**	**17:00**	**71.9**	**91.9**	**1.09**	**1.05**
8/27/2024	17:00	18:00	71	91	0.85	0.81
8/27/2024	18:00	19:00	88.6	88.6	0.83	0.79

*SMA adjustment factor is limited to 80%-120% if it exceeds those bounds.

2.10.4 Description of Participants

Any Entergy Arkansas residential customer who has a central air conditioner or heat pump in good working condition is eligible to participate in the Summer Advantage Program and is eligible to receive program incentives. Summer Advantage Program participants who request to be removed from the program will no longer be counted as a participant.

2.10.5 Program Challenges and Opportunities

The company is currently exploring options to decommission or upgrade older, obsolete demand response technologies, such as one-way controlled air conditioner switches, to continue transforming demand response programs to include new technologies such as smart thermostats and other new advanced wireless technologies, as they become available.

2.11 Smart Direct Load Control Pilot

2.11.1 Program Description

The Entergy Arkansas Smart Direct Load Control Pilot Program is designed to reduce peak electricity demand at the point of use in Entergy Arkansas' service territory. The program works to help reduce high-energy demand. Customers can participate by enrolling their existing qualifying smart thermostat, applying for a self-installation or direct installation of a Sensi Touch smart thermostat.

The Smart Direct Load Control Pilot Program participants must meet the following criteria:

- Open to Entergy Arkansas residential and nonresidential customers who have central heating and air conditioning.
- Have an in-home or in-business Wi-Fi service.
- Have an existing Emerson Sensi Touch, Sensi Wi-Fi, Honeywell Lyric T5, T5 plus, T6, T9 and T10 smart thermostat or a thermostat that qualifies for a replacement of a professionally installed Sensi Touch at no additional cost to the customer.
- Are not already enrolled in the Summer Advantage Program. If enrolled, customers must unenroll from the Summer Advantage Program to participate.
- Must have a qualifying HVAC system.

2.11.2 Program Highlights

The Smart Direct Load Control Pilot Program achieved 3,802 gross MWh savings in 2024 with a 100% realization rate and a net-to-gross ratio of 88%; this resulted in 3,341 MWh net energy savings.

For the 2024 curtailment season, there were four curtailment events for the total population; this includes a test event on June 3. The curtailment strategies used were temperature rises of up to three degrees.

Further event details can be found in figure 2.11.2.1.

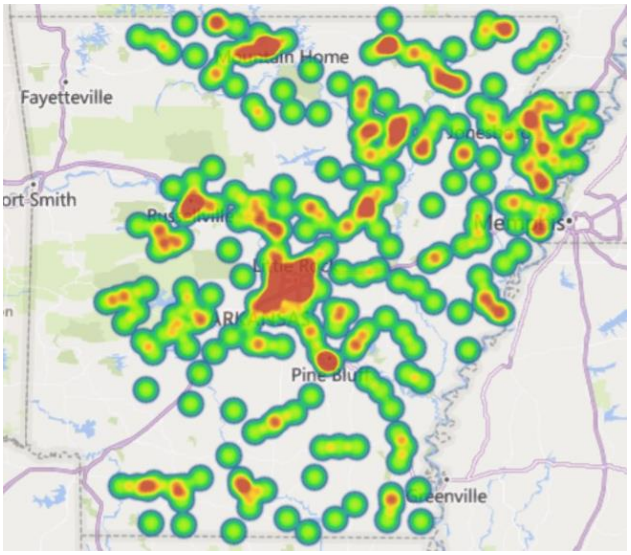
Figure 2.11.2.1

Date	Start time (CST)	End time (CST)	Participating thermostats	Event type
06/03/2024	12:55	14:00	9,432	Test event
06/14/2024	16:00	18:00	9,651	Normal event
07/31/2024	15:55	18:00	9,709	Normal event
08/24/2024	15:55	18:00	10,072	Normal event

- In 2024, the Smart Direct Load Control Pilot Program implemented successful marketing efforts, such as emails, postcards, and media campaigns.
- Of the newly enrolled thermostats in 2024, 844 went through the program's field QA/QC process.
- There were 78 M&V devices installed. These devices will be used to validate the load reduction for each conservation event.
- In 2024, 12,267 thermostats were enrolled during the demand response season. This includes enrollments from the 2020 through 2023 program years.

Figure 2.11.2.2 represents new customer participating locations within Entergy Arkansas service territory.

Figure 2.11.2.2



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Program Overview:

The Entergy Arkansas Smart Direct Load Control Pilot allows residential and nonresidential customers who have qualifying thermostats or replacement of a baseline thermostat with a Sensi Touch smart thermostat to enroll. Participants authorize Entergy Arkansas to control the participating equipment (smart thermostat) on days when electricity demand is highest, helping to reduce demand when it counts most. These are known as “conservation periods.”

Customers may enroll by choosing a participating trade ally or by enrolling through the enrollment portal located at entergyarkansas.com/thermostat. Customers that qualify for a no-additional-cost installation receive a professionally installed thermostat, which is a $350 value. In addition to the free thermostat, participating customers can receive an annual enrollment incentive up to $40 for residential customers and up to $100 for business customers. This is a $390-$450 value in the first year of participation.

For those who already have a qualifying Emerson or Honeywell thermostat (Sensi Touch, Sensi Wi-Fi, Honeywell Lyric T5, T5 Plus, T6, T9 or T10), the customer will receive an enrollment incentive of $50 for residential and $100 for non-residential. An additional annual participation incentive will also be issued to qualifying customers after the demand response conservation season with incentives up to $40 for residential customers and $100 for business customers.

Conservation periods will occur from June 1 through September 30 on non-holiday weekdays (Monday-Friday), noon to 7 p.m. Central Standard Time. Conservation periods will last approximately four hours in any single day and occur for no more than three consecutive days in any one program season (June to September). Participants may override conservation periods by opting out; overriding conservation periods may reduce annual enrollment incentives.

The annual enrollment incentive is dependent on the number of events participated. If the customer’s thermostat is disconnected due to Wi-Fi issues, or if the customer chooses to opt out of a conservation event, this could reduce the annual enrollment incentive amount. Thermostat disconnectivity and conservation period opt outs will be counted as an opt out. Both residential and non-residential customers may opt out one time without a reduction. If a customer opts out two or three times, the residential incentive will decrease to $25 while the non-residential incentive will reduce to $50. If a customer opts out four or more times, residential and non-residential customers will not receive an annual incentive.

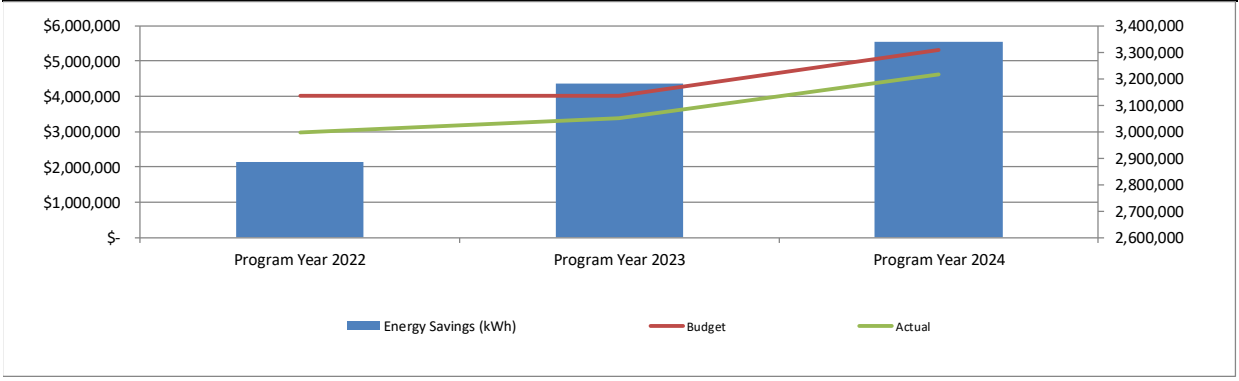
2.11.3 Program Budget, Savings and Participants

Table 2.11.3 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.11.3

Smart Direct Load Control Solutions Budget, Savings and Participants

Smart Direct Load Control Pilot												
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 4,005,439	$ 2,986,435	75%	4,972,827	2,884,190	58%	27,513	3,868	14%	16,525	3,643	22%
Program Year 2023	$ 4,005,439	$ 3,390,368	85%	4,972,827	3,182,436	64%	27,513	5,942	22%	16,525	1,393	8%
Program Year 2024	**$ 5,311,366**	**$ 4,625,493**	**87%**	**4,384,534**	**3,340,504**	**76%**	**13,655**	**6,753**	**49%**	**10,691**	**1,974**	**18%**



2.11.4 Description of Participants

Customers who have an Entergy Arkansas residential or non-residential account that meet the program eligibility requirements may participate. The program eligibility requirements can be found within the Program Description section.

In 2024, an electric hot water heater pilot began, and achieved 57 enrollments. The pilot will continue in 2025.

2.11.5 Program Challenges and Opportunities

The Smart Direct Load Control Pilot Program is an innovative program that allows for several paths to participate. The pilot aims to reduce peak electricity demand while also capturing

deemed kWh savings from thermostat installations for both residential and commercial customers. The many paths of participation and thermostat models offered within the program can create customer confusion. As the pilot progresses, continued refinement to program information will improve the enrollment experience.

M&V devices are vital to confirm load reduction during conservation events. The program experienced hesitancy in 2024 from the participating customer base in allowing M&V device installation.

EM&V Recommendations:

- Model the effect of weather on demand using a lagged time variable.

2.11.6 Planned or Proposed Changes to Program and Budget

The program's implementation and incentive budget and MWh savings for 2025 will increase to account for the growth in enrollment.

The Water Heater Pilot Program will continue in 2025 with a focus on commercial water heaters.

2.12 Agricultural Irrigation Load Control Program

2.12.1 Program Description

Entergy Arkansas' Agricultural Irrigation Load Control ("AILC") program is designed in accordance with the conservation and energy efficiency benefits and objectives set forth in the C&EE Rules. The AILC program year 2024 is the fifteenth year of the AILC program plan. The 2024 AILC program awarded cash incentives to eligible participants in return for allowing Entergy Arkansas the right to interrupt their irrigation pump motors during peak times of the day for the summer months. Since 2015, the AILC program has been implemented by an implementing contractor , Connected Energy, that supplies the control equipment, provides the communications modules, arranges and manages cellular service connections, provides the equipment installation and equipment maintenance activities, manages and operates the required software components and conducts all of the AILC program marketing.

Program rebate incentives are paid to AILC program participants based on Table 2.12.1 below:

Table 2.12.1

Agricultural Irrigation Load Control Incentive Structure

Agricultural Irrigation Load Control Incentive Structure	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6	Tier 7	Tier 8	Tier 9
Motor HP	10-25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	>200
Monthly Incentive*	$50	$100	$200	$250	$350	$450	$550	$650	Upon request
**Incentive void if customer actions interfere with event. Minimum of 64 run-time hours is required during summer months to receive incentive.*									

In addition to cash incentives, the participants receive other benefits such as real-time notifications of the program interruptions and secure internet access to control systems which enable the participant to manage their participating pumps remotely year-round. The following screenshot is representative of the typical information and control systems participants may access. The participant portal first gives an overview of the participant's farm and well locations overlaid with the most current weather radar information. The participant may select any colored well marker to operate the well. Red markers indicate an active irrigation pump and blue markers

indicate pumps which are turned off. Yellow colored markers indicate trouble or inactive accounts with no electric service while green markers indicate the pump is under the control of Entergy Arkansas. Selecting any well marker opens up the control window for the pump with the option to turn an active pump off or an inactive pump on. Load consumption data is also displayed.

Figure 2.12.2

Farmer Secure Portal View 1



290 new pump installations and 67 LTE device conversions were completed in 2024. In addition to the 2024 installations and LTE conversions, Connected Energy maintained and managed over 3,900 previously installed well locations from 2014 through 2024. In 2024, the AILC program was registered for an eleventh year as a MISO Load Modifying Resource. The 2024 AILC program demand reduction target was 22.8 MW of curtailment and 1.5 MW firm service level.

2.12.2 Program Highlights

Connected Energy's Operations and Maintenance Highlights:

- New Equipment Installations and Conversions: The AILC program achieved the 2024 plan of 290 new installations and 67 LTE device conversions.
- Software: Entergy Arkansas successfully executed 6 irrigation load management events in 2024 utilizing the Connected Energy-hosted CNRG-Demand Management and Farmer Portal solutions as the sole operating system.
- Maintenance: Connected Energy completed 183 field maintenance actions to ensure that the overall system performed as required.
- Technology: Connected Energy continued to support 3G device conversions over to the Verizon LTE wireless communication network during all new installation, conversion,

and maintenance activities during 2024 due to the termination of the Verizon 3G network on December 31, 2023.

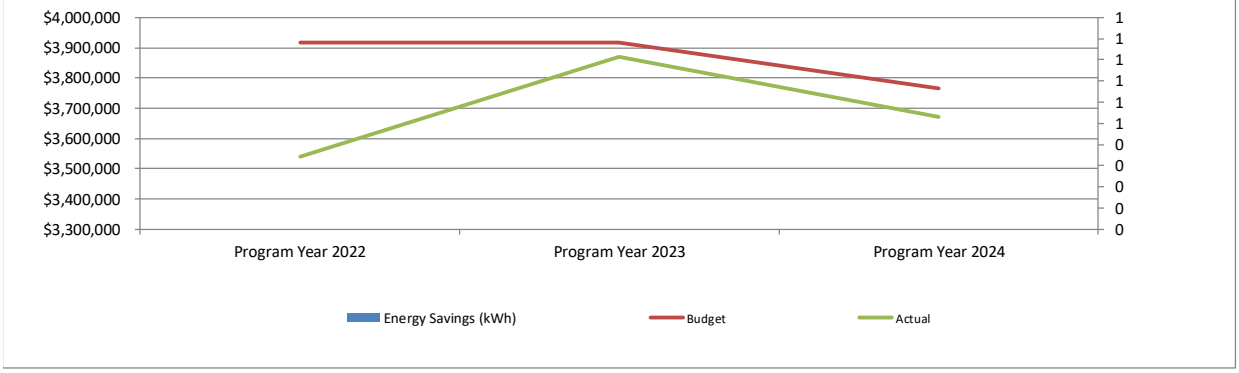
2.12.3 Program Budget, Savings and Participants

Table 2.12.3 is the program budget, annual energy savings and number of participants from Workbook Table 5 as required by the C&EE Rules, Section 9: Annual Reporting Requirements and Order No. 16 in Docket No. 10-010-U.

Table 2.12.3

Agricultural Irrigation Load Control Program Budget, Energy Savings and Participants

Agricultural Irrigation Load Control													
	Expenditures			Energy Savings (kWh)			Demand Savings (kW)			Participants		
Program	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2022	$ 3,918,060	$ 3,541,018	90%	0	0	-	49,922	21,795	44%	1,871	1,857	99%
Program Year 2023	$ 3,918,060	$ 3,869,623	99%	0	0	-	49,922	17,711	35%	1,871	1,605	86%
Program Year 2024	**$ 3,764,179**	**$ 3,669,706**	**97%**	**0**	**0**	**-**	**22,800**	**18,328**	**80%**	**483**	**1,605**	**332%**



Program Events & Training:

- AILC device installation and maintenance training was provided to our installation subcontractors on April 8, 2024, and April 9, 2024. Training included the review and reinforcement of all AILC device installation processes supporting new and legacy technology including a review of required personal protective equipment, wiring diagrams, mounting, wire termination, phase angle determination,current transducer orientation, reporting, site cleanup, and electrical & environmental safety.

Program Savings:

There were no deemed savings in this program because it is a load control program. On July 16, 2024, a peak load of 23.67 MW was available on the system for curtailment.

On July 3, 2024, an evaluated interrupted load of 20.035 MW was curtailed with 981 wells reporting as curtailable with 99.09% (total base of 990 wells) successfully reporting curtailments. All results were verified by an independent third party who used actual 15-minute interval data from each account with equipment installed to interrupt the loads. The MISO baseline methodology in Business Practice Manual ("BPM") 26 for System Marginal Attainment ("SMA") continued to be utilized for 2024 evaluations.

In PY 2024, the AILC program responded to six load control events totaling 17 curtailment hours. The first of the events was a test event (June 3), used to verify equipment operability and verify M&V data collections, while the other 5 events occurring on June 14, July 3, July 31, August 6, and August 27 were used to reduce loads during the event hours. The June 3 event duration was one hour, the June 14 event was 4 hours, the July 3 and August 6 events were 2 hours in duration while the July 31 and August 27 events both lasted 4 hours. The data collected by the metering equipment allowed each participant to have their load metered in a 15-minute interval for the entire load-control season, providing highly granular data to support program baseline and event savings calculations.[22]

2.12.4 Description of Participants

A participant is an Entergy Arkansas agricultural irrigation pumping account that is receiving AILC program rebate incentives as a result of being an active participating account controlled by Entergy Arkansas during an event. Program marketing and enrollment is primarily executed via email and direct mail with a follow up call from a Connected Energy Customer Engagement representative. Other marketing channels included farmer referrals.

2.12.5 Program Challenges and Opportunities

Seasonal irrigation account change requests can result in AILC program unenrollment due to

[22] PY2024 Agricultural Irrigation Load Control Program Impact Evaluation Results, Evaluation Report, Tetra Tech, 18 April 2024, p. 316.

changes in the customer's BP data. AILC program participants misplace or delay depositing seasonal incentive checks beyond the 90-Day timeframe after which the checks become void and must be reissued. Recommend update to program terms and conditions in 2025 for the disposition of uncashed AILC incentive checks.

Program Outlook for Continuation, Expansion, Reduction or Termination:

2025 Recruiting: New AILC program recruiting will again experience increased activity during late 2024 and early 2025 with 300 new load control device installations planned. Connected Energy will continue to support new pump enrollments from existing program participants and the prioritization of larger motor well pump locations to maximize the total load potential contributing to the AILC program.

2.12.6 Planned or Proposed Changes to Program and Budget

Continued enhancements to event and program reporting as requested.

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2.13 Energy Efficiency Arkansas

- Formerly, the Energy Efficiency Arkansas ("EEA") Program's objective was to cost-effectively deliver relevant, consistent, and fuel neutral information and training that causes people to consume less energy through energy efficiency and conservation measures.
- Orders No. 65 and 62 in Docket Nos. 13-002-U and 07-083-TF respectively, granted the Arkansas Energy Office request to terminate the EEA Comprehensive Program no later than December 31, 2023. AEO independently administers a separate and independent suite of energy education and training programs, similar to the EEA. The AEO will administer the expanded suite of programs with state and federal funding and will no longer need funding from the Arkansas utilities. No additional funding was administered for the program after December 31, 2023.
- For more information about this former program please see the EEA report as filed by the Arkansas Energy Office in Docket No. 07-083-TF.

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3.0 Supplemental Requirements

3.1 Staffing

The 2024 programs had five full-time staff members, one of whom is an Energy Efficiency program manager, plus one full-time contract employee to assist in marketing and communications coordination, and three part-time contract employees to assist in quality assurance and control. Two vacancies due to retirement and resignations are currently being backfilled. The certifications, education and experience of the Entergy Arkansas staff make for a strong team. Of the five full-time staffers, two are degreed engineers. Combined, the staff brings knowledge and experience in customer service, market planning, product development, construction and transmission project experience, transmission planning, accounting, regulatory affairs, and community and economic development. Two staff members have Association of Energy Engineers Business Energy Professional certification, and one staff member has an Association of Energy Engineers Energy Efficiency Practitioner Professional certification. The staff includes a certified energy auditor. Two staff members hold the Building Performance Institute's Business Analyst certification. One staff member has a Master's degree in the area of business, and one has an accounting degree. The utility also leveraged many other non-incremental employees to promote the programs, provide benefit cost analysis, regulatory and legal support, back-office billing and contractor recruitment for the irrigation load control program.

None of the non-incremental employees used more than 50% of their annual man-hours supporting the programs.

3.2 Stakeholder Activities

Entergy Arkansas is involved in all of the Commission-ordered stakeholder processes. Entergy Arkansas considers stakeholders to be customers, trade allies, and state agencies that provide informative feedback to enhance program delivery and acceptance. Further, all training activities provide opportunities for the collaborative exchange of ideas and enhancements. Those training sessions can be found below, as well as in the 2024 SARP tabular report.

EXTERNAL TRAININGS

Event No.	Start Date	Class
1.	1/3/2024	Ladder safety
2.	1/3/2024	Defensive Driving
3.	1/9/2024	Winter Heat Pump
4.	1/11/2024	Online Webinar
5.	1/18/2024	Smart DLC training
6.	1/29/2024	Arkansas Soil and Water Education Conference (ASWEC)
7.	1/30/2024	CEI Workshop
8.	1/31/2024	Air sealing best practices
9.	1/31/2024	Smart DLC training
10.	1/31/2024	Tool project submission training
11.	2/5/2024	AESP
12.	2/8/2024	Online Webinar
13.	2/14/2024	CEI Workshop
14.	2/14/2024	TA Inspection
15.	2/19/2024	Trade Ally Training
16.	2/22/2024	Trade Ally Summit 2024
17.	2/27/2024	Trade Ally Summit 2024
18.	2/28/2024	Ceiling Insulation best practices
19.	3/4/2024	Trade Ally Training
20.	3/6/2024	Trade Ally Training
21.	3/12/2024	ACTU training
22.	3/13/2024	Energy Expo
23.	3/13/2024	Trade Ally Training
24.	3/13/2024	Trade Ally Training
25.	3/28/2024	Trade Ally Training
26.	3/28/2024	Chapter 4 Ventilation
27.	3/31/2024	Customer Service training
28.	4/2/2024	ACTU Training
29.	4/4/2024	Marketing Event
30.	4/8/2024	AILC Field Operations - Device Installation, maintenance, troubleshooting, safety
31.	4/8/2024	Annual BPA Conference
32.	4/9/2024	AILC Field Operations - Device Installation, maintenance, troubleshooting, safety
33.	4/10/2024	Trade Ally Training
34.	4/24/2024	Customer Service training
35.	4/30/2024	Duct sealing best practices
36.	5/1/2024	Trade Ally Training
37.	5/16/2024	AAA Trade Show

38.	5/20/2024	Water Heater Load Control - Device installation, troubleshooting, safety
39.	5/21/2024	Water Heater Load Control - Device installation, troubleshooting, safety
40.	5/22/2024	CEI Workshop
41.	5/29/2024	Trade Ally Training
42.	5/30/2024	ACTU Training
43.	5/30/2024	Trade Ally Training
44.	5/30/2024	Tool project submission training
45.	5/31/2024	ARVAC
46.	6/5/2024	Virtual Affordable Home Energy Summit
47.	6/6/2024	Trade Ally Training
48.	6/11/2024	Trade Ally Training
49.	6/13/2024	Refrigerant Change to R-454B
50.	6/17/2024	Business Energy Professional (BEP)
51.	6/18/2024	Trade Ally Training
52.	6/18/2024	Trade Ally Training
53.	6/20/2024	Trade Ally Training
54.	6/20/2024	Trade Ally Training
55.	6/25/2024	Trade Ally Training
56.	6/26/2024	ACTU Training
57.	6/26/2024	Trade Ally Training
58.	7/1/2024	Trade Ally Training
59.	7/2/2024	Trade Ally Training
60.	7/3/2024	Lockout/Tagout
61.	7/3/2024	Electrical Safety
62.	7/16/2024	Trade Ally Training
63.	7/17/2024	Customer Service training
64.	7/17/2024	Weatherization Training
65.	7/17/2024	Refrigerant Change to R-32
66.	7/23/2024	Trade Ally Training
67.	7/24/2024	CEI Workshop
68.	7/24/2024	Trade Ally Training
69.	7/29/2024	Trade Ally Training
70.	7/31/2024	Trade Ally Training
71.	8/1/2024	Trade Ally Training
72.	8/2/2024	ACEEE Summer Study Conference
73.	8/6/2024	Trade Ally Training
74.	8/14/2024	Trade Ally Training
75.	8/27/2024	CEI Workshop
76.	9/4/2024	Trade Ally Training
77.	9/12/2024	CEI Workshop
78.	9/18/2024	Trade Ally Training
79.	9/23/2024	ACTU Training
80.	9/23/2024	Trade Ally Training
81.	9/24/2024	Trade Ally Training

82.	9/24/2024	Trade Ally Training
83.	9/26/2024	ACTU Training
84.	9/26/2024	Trade Ally Training
85.	9/30/2024	Tool project submission training
86.	9/30/2024	Energy Forum
87.	10/1/2024	Trade Ally Training
88.	10/9/2024	Defensive Driving
89.	10/14/2024	Weatherization Training
90.	10/16/2024	2024 AILC Lessons Learned Meeting
91.	10/18/2024	EmPower Conference
92.	10/18/2024	Trade Ally Training
93.	10/21/2024	Trade Ally Training
94.	10/22/2024	Trade Ally Training
95.	10/24/2024	Trade Ally Training
96.	10/28/2024	Certified Demand Side Management
97.	10/30/2024	CEI Workshop
98.	10/30/2024	Customer Service training
99.	10/31/2024	Spanish Speaking Webinar
100.	11/20/2024	AEE Chapter Meeting
101.	12/12/2024	Trade Ally Training
102.	12/30/2024	Tool project submission training
TOTAL: 102 Trainings		

INTERNAL TRAININGS

Event No.	Start Date	Class
Event No.	**Start Date**	**Class**
1.	1/2/2024	Employment Law Essentials for Leaders - American with Disabilities Act
2.	1/2/2024	Employment Law Essentials for Leaders - Family and Medical Leave Act
3.	1/2/2024	Employment Law Essentials for Leaders - Equal Employment Opportunity
4.	1/2/2024	Employment Law Essentials for Leaders - Fair Labor Standards Act
5.	1/2/2024	First Line Leadership Development
6.	1/3/2024	Future of Work Quarterly Location Review
7.	1/25/2024	A Client Perspective on Decarbonization
8.	2/8/2024	Principles of Vehicle Efficiency
9.	2/18/2024	Entergy's Form I-9 Training
10.	2/19/2024	Entergy Security 101
11.	2/22/2024	Heat Pumps - that Run on Gas!
12.	3/7/2024	Building Automation Systems
13.	3/21/2024	What’s growing on? HVAC&D lessons from the (indoor) field

14.	4/4/2024	Emerging Trends and Technologies in Electric Vehicle Charging Infrastructure
15.	4/18/2024	Climate Science & Policy 102
16.	4/20/2024	Settlement Agreements Self Study Materials Acknowledgement
17.	4/20/2024	Code of Entegrity Acknowledgement Process
18.	4/20/2024	Arkansas Affiliate Transaction Rules Self Study Materials
19.	5/9/2024	Engineering the Intelligent Commercial Lighting Transition
20.	5/16/2024	Thermal Energy Storage for Cold Storage Facilities
21.	5/30/2024	Ground-source Heat Pumps and the STATE Energy Office Geothermal Energy Grant Program
22.	6/13/2024	Carbon Capture, Utilization, and Sequestration
23.	6/16/2024	Corporate Risk Control Standards
24.	6/17/2024	Contractor Safety Management I
25.	6/17/2024	Business Energy Professional Certification Class
26.	6/20/2024	Utility Retrofit Program Evolves from Lighting to Non-lighting
27.	6/30/2024	Discrimination and Harassment Prevention
28.	6/30/2024	Incident Response Role Attestation
29.	7/18/2024	Harsh Realities in the Pacific Northwest
30.	7/25/2024	Employment Law Essentials For Leaders – Family and Medical Leave Act
31.	8/1/2024	The Engineering Side of CoolSaver
32.	8/15/2024	Lessons Learned from UTILITY EV Site Assessments Pilot
33.	8/26/2024	Entergy Energy Efficiency Summit
34.	8/28/2024	Energy Star Products Partner Mtg
35.	8/29/2024	Refrigerant Swapouts and Energy Efficiency after the AIM Act
36.	9/3/2024	FERC Affiliate Rules Training
37.	9/3/2024	Insider Threat Awareness
38.	9/19/2024	Wastewater Energy Recovery
39.	10/14/2024	Workplace Violence Prevention & Active Shooter Awareness
40.	10/17/2024	Dispatches from the 2024 IES and DOE Lighting Research Symposium
41.	10/21/2024	S-CIP-013
42.	10/31/2024	2024 Engineering Ethics
43.	11/14/2024	Heat Recovery Chillers 101
44.	11/14/2024	Ethics & Compliance Training
45.	11/21/2024	Team Execution Essentials (TEE)
46.	12/5/2024	Workshop: Communicating Effectively in a Noisy World
Total: 46 Trainings		

3.3 Information Provided to Consumers to Promote Energy Efficiency

See Appendix D.

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Appendix A: EM&V Report

Appendix D: Marketing Collateral

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ENTERGY ARKANSAS, LLC

Arkansas Energy Efficiency

Program Portfolio Annual Report

Docket No. 07-085-TF

2024 PROGRAM YEAR

May 1, 2025

Appendix A

EM&V Report for Entergy Arkansas, LLC Annual Report

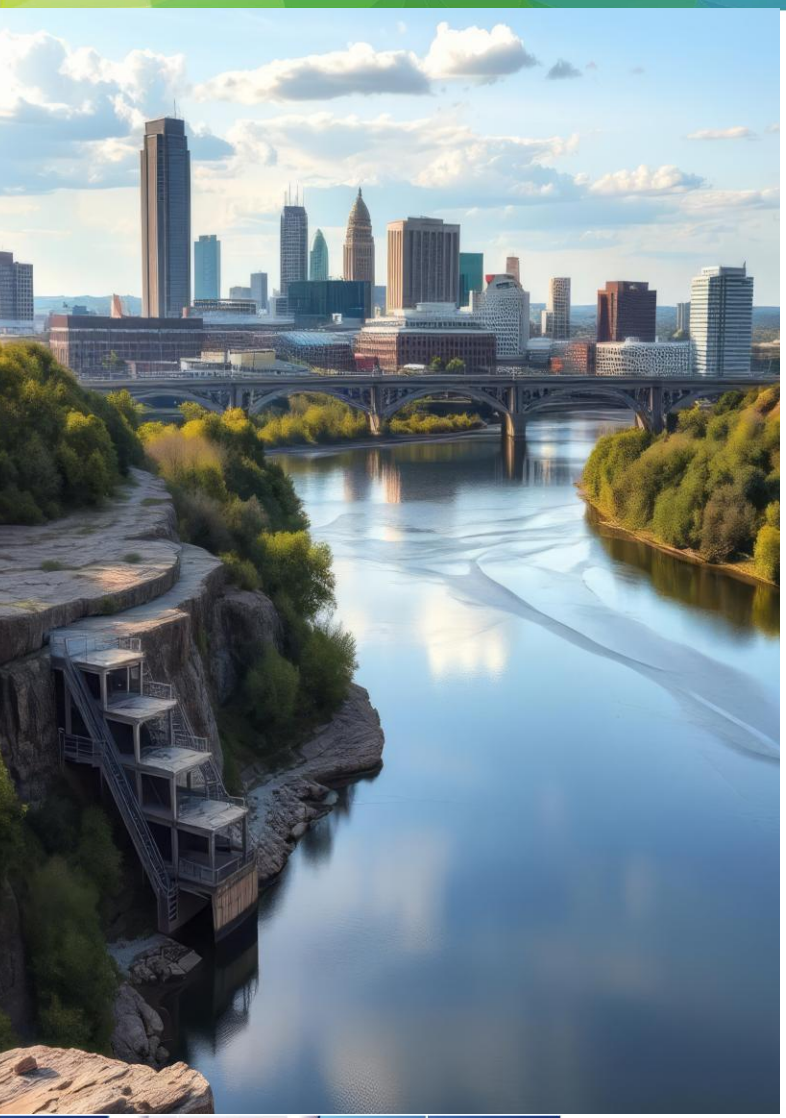


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TETRA TECH

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Program Year 2024 Evaluation Report



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ACKNOWLEDGMENTS

We want to acknowledge the many individuals who contributed to the evaluation, measurement, and verification (EM&V) of program year 2024. This evaluation effort would not have been possible without their assistance and support.

Entergy Arkansas, LLC (EAL) staff participated in ongoing evaluation deliverable reviews and discussions, attended multiple meetings, and responded to follow-up questions and program data and documentation requests. EAL staff included Sharnelle Allen, Santiago Asimbaya, Beau Blankenship, Heather Hendrickson, and Denice Jeter. The Independent Evaluation Monitor (IEM), led by Dr. Katherine Johnson, also provided input and guidance throughout the evaluation process. We also wish to thank the implementation contractor staff at CLEAResult, ICF Consulting, Itron, and Connected Energy, who provided program data, documentation, and insight into program implementation. CGI's team overseeing EAL's data-tracking system assisted throughout the year in understanding data extracts from EAL's tracking system. It continues to provide high-quality data that is user-friendly and readily available to the EM&V team.

The primary members of the EM&V team include:

Contributor	Role
Lark Lee	Project director and technical reviewer
Jonathan Hoechst	Project manager, demand response and non-energy benefits lead
Kendra Mueller	Commercial sector lead
Katie Jakober	Residential sector lead
Carrie Koenig	Process and net-to-gross lead
Nathan Kwan, Mohammad Qandil, and Andrew Spista	Program leads
Theresa Wells and Graham Thorbrogger	Data analysis and reporting

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ACRONYMS & ABBREVIATIONS

Acronyms/abbreviation	Definition
AEE	Association of Energy Engineers
AC	Air conditioner
ADRC	Avoided and deferred replacement cost
AER	Automatic engineering review
AES	Agricultural Energy Solutions
AOH	Annual operating hours
AILC	Agricultural Irrigation Load Control
APSC	Arkansas Public Service Commission
ArchEE	Entergy Arkansas Energy Efficiency Tracking System
BR	Bulged reflector
BY	Bridge year
C&EE	Conservation and energy efficiency
C&I	Commercial and industrial
CEE	Consortium for Energy Efficiency
CF	Coincidence factor
CCFL	Cold cathode fluorescent lamp (bulb)
CFL	Compact fluorescent lamp (bulb)
CFM	Cubic feet per minute
CPM	Computer power management
DCU	Digital control unit
DI	Direct install
DLC	DesignLights Consortium
EAL	Entergy Arkansas, LLC
ECM	Electronically-commutated motor
EER	Energy efficiency ratio
EFLH	Equivalent full-load hours
EISA	Energy Independence and Security Act
EL	Efficiency loss
EM&V	Evaluation, measurement, and verification
ESCO	Energy service company
GPM	Gallons per minute
HDD	Heating degree days
HEC	Home Energy consultants

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Acronyms/abbreviation	Definition
HES	Home Energy Solutions
HID	High-intensity discharge
HOU	Hours of use
HP	Heat pump
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
IPMVP	International Performance Measurement and Verification Protocol
ISR	In-service rate
IT	Information technology
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light-emitting diode
LFL	Linear fluorescent lamp
LMR	Load modifying resource
LPD	Lighting power density
M&V	Measurement and verification
MR	Multifaceted reflector
NC	New construction
NEB	Non-energy benefit
MISO	Midcontinent Independent System Operator
MW	Megawatt
MWh	Megawatt-hour
NPV	Net present value
NTG	Net-to-gross
PAC	Program administrator cost
PAR	Parabolic aluminized reflector
PCT	Participant cost test
PG&E	Pacific Gas & Electric
PSE	Puget Sound Energy
PSI	Pounds per square inch

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Acronyms/abbreviation	Definition
PSIG	Pounds per square inch in gauge
PTAC	Packaged Terminal Air Conditioners
PTHP	Packaged Terminal Heat Pumps
PY	Program year
QA	Quality assurance
QC	Quality control
QMP	Quality management process
RCA	Refrigerant charge adjustment
Res DLC	Residential Direct Load Control
RIM	Ratepayer impact measure
RLA	Residential Lighting and Appliances
ROB	Replace-on-burnout
SDLC	Smart Direct Load Control
SEER	Seasonal energy efficiency ratio
SMA	Symmetric multiplicative adjustment
TMY	Typical meteorological year
TRM	Technical reference manual
VFD	Variable frequency drive

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1.0 EXECUTIVE SUMMARY

Program year (PY) 2024 (PY2024) saw Entergy Arkansas, LLC (EAL) once again provide a comprehensive range of customer options focused on energy efficiency and demand reduction coupled with education and training activities through 11 energy efficiency programs and 1 pilot. EAL designed its portfolio to meet the following objectives:

- achieve the net energy-savings target of 253,490 megawatt-hours (MWh) and demand reduction target of 88.5 megawatts (MW)[1];
- provide significant energy-savings opportunities for all customers and market segments, including low-income and senior customer segments as outlined in Act 1102, resulting in broad ratepayer benefits;
- meet comprehensiveness in seven areas (i.e., comprehensiveness factors) defined by the Arkansas Public Service Commission (APSC)[2]; and
- deliver the consistent weatherization approach (CWA) through its residential programs.

EAL selected Tetra Tech as its independent, third-party evaluation contractor under APSC Rules for Conservation and Energy Efficiency Programs (C&EE Rules). Tetra Tech conducted evaluation, measurement, and verification (EM&V) across each program in EAL's PY2024 energy efficiency portfolio. The PY2024 EAL evaluation included impact and process analyses specified in the APSC rules and follows the Arkansas Technical Reference Manual (TRM) Version 9.2 (TRM 9.2) Volume 1 protocols and savings algorithms. Figure 1 highlights the primary evaluation activities. The independent evaluation monitor (IEM) reviews and provides feedback on Tetra Tech's evaluation plans.

Deviations from the evaluation plan. The PY2024 Evaluation Plan[3] included up to 325 desk reviews, 85 on-sites, and census meter analysis for three demand response programs for impact evaluation activities. The EM&V team completed 315 desk reviews, 90 on-sites, and 36 commercial project meter analyses in addition to the three demand response programs census analyses. Metered data analysis is included as an optional task for commercial evaluation plans if determined to be needed for custom projects. In PY2024, the EM&V team completed 27 custom project-level meter analyses for Large C&I Solutions and 9 for Public Institutions Solutions. Agricultural Energy Solutions (AES) had eight desk reviews and eight on-site ride-alongs in PY2024 instead of the planned estimate of up to 20 desk reviews and five on-sites because there were only 17 customers who participated in the AES program. The EM&V team refined the target completes throughout the evaluation period during sampling based on the results' confidence and precision. For each program, the EM&V team's impact results achieved better than the industry standard of 90 percent confidence ±10 percent (the reader is referred to the Technical Appendix for precision calculations by program). Four programs had participant surveys completed. A total of 444 participant surveys were planned to support those efforts, and the EM&V team completed 542 surveys to increase representation across different measures.

[1] Order No. 68 in Docket No. 13-002U established electric utility savings targets of 1.2 percent of weather-adjusted actual 2022 retail sales. Order No. 72 approved EAL's 2024–2026 Energy Efficiency Plan.
[2] As defined by the APSC in the C&EE Rules of Order No. 17 in Docket 08-144-U.
[3] Entergy Arkansas, LLC Program Year 2024 Evaluation Plan, Tetra Tech, September 2024.

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Figure 1. Highlights of the PY2024 Evaluation Activities



The impact evaluation resulted in defensible lifetime and annual gross and net energy and demand estimates. Impact evaluations were used to calculate realization rates; these rates are determined by comparing evaluated savings (ex-post) with EAL-reported savings (ex-ante savings). A net-to-gross (NTG) ratio was applied to the evaluated savings to determine the net evaluated or achieved savings. The overarching approach to impact evaluations was to:

- complete a tracking system review to assess if TRM 9.2 is correctly applied to calculate savings[4] and assess data captured for new or expanded measure offerings;
- adjust program-reported gross savings using the results of evaluation research, relying primarily on the tracking system and engineering desk reviews, metered data analysis, and on-site or independent verification;
- discuss evaluation adjustments for TRM deemed savings or custom measures in each program-level impact section, and document reasons for adjustments and how they directly inform impact recommendations;
- achieve a minimum precision of ±10 percent of the gross realized savings estimate with 90 percent confidence;
- update program NTG values with primary or secondary data research for every program once during the PY2024–PY2026 program cycle, as well as review and adjust NTG ratios annually for any changes in the program design or measure mix;
- provide complete documentation and transparency of all evaluated savings estimates[5];
- provide ongoing technical reviews and guidance to implementers and EAL as early as possible;
- calculate portfolio non-energy benefits (NEB); and
- conduct EM&V research to inform possible updates for the next version of the TRM.

[4] Tracking system review realization rates provided in program-level detailed results are very close to or 100 percent. The EM&V team completes an interim census tracking system review mid-program-year to facilitate adjustment in savings calculations as needed. This proactive review supports corrections being made prior to final tracking data and supports improved realization rates at the end of the program year.
[5] For detailed desk review and on-site results, please see the Technical Appendix to this report.

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The approach to the process evaluation was to:

- gain an in-depth understanding of program operations, challenges, and evaluation needs through interviews with EAL and implementation contractor key staff at both the beginning and end of the evaluation cycle, complemented with communication and program documentation reviews throughout the program year, including biweekly implementation contractor status meetings;
- conduct a comprehensive process evaluation for every program once over the three-year PY2024–PY2026 program cycle and assess other process evaluation needs annually;
- document EAL's progress in incorporating recommendations identified during the prior year's evaluation; and
- update the assessment of EAL's success in achieving the goals and objectives established in the APSC's Comprehensiveness Checklist.

Table 1 provides a summary of EM&V activities by each program in the BY2023 portfolio.

Table 1. Summary of EM&V Activities for EAL PY2024 Programs

Program	NTG approach	Process evaluation activities	Gross impact evaluation completes			
			Tracking system review	Desk reviews	On-site M&V or independent verification	Metered data analysis[6]
Home Energy Solutions	BY2023 EM&V research—participant surveys	Program staff interviews (1) Materials review NEBs estimates	Census	51	11	None
Energy Solutions for Multifamily	PY2021 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review NEBs estimates	Census	31	6	None
Energy Solutions for Manufactured Homes	PY2020 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review Participant surveys (30) Update Act 1102	Census	20	5	None

[6] This column refers to EAL customer metered data provided to the EM&V team as opposed to primary metered data collected as part of the on-site measurement and verification (M&V).

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Program	NTG approach	Process evaluation activities	Gross impact evaluation completes			
			Tracking system review	Desk reviews	On-site M&V or independent verification	Metered data analysis[6]
Low-Income Solutions Offering	PY2020 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review Participant surveys (41) Update Act 1102	Census	30	5	None
Point of Purchase Solutions	PY2024 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review	Census	50	None	None
Large Commercial & Industrial Solutions	PY2024 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review Early engagement reviews (19)	Census	70	30	27
Small Business Solutions	PY2022 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review	Census	25	10	None
Public Institutions Solutions Offering	PY2022 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review	Census	30	15	9
Agricultural Energy Solutions	PY2022 EM&V research—participant surveys	Program staff interviews (2) Materials review	Census	8	8 (ride-alongs)	None
Residential Direct Load Control	Stipulated at 1.0 as industry practice	Program staff interviews (2) Materials review	Census	None	None	Census
Smart Direct Load Control Pilot	PY2024 EM&V research—participant surveys	Program staff interviews (2) Materials review	Census	None	None	Census

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Program	NTG approach	Process evaluation activities	Gross impact evaluation completes			
			Tracking system review	Desk reviews	On-site M&V or independent verification	Metered data analysis[6]
Agricultural Irrigation Load Control	Stipulated at 1.0 as industry practice	Program staff interviews (2) Materials review	N/A	N/A	N/A	Census

1.1 KEY FINDINGS AND RECOMMENDATIONS

EAL fell slightly short of its portfolio energy goals, achieving 99.3 percent of its filed goal. The utility made measured improvements towards achieving demand savings goals, improving from 55 percent of the portfolio demand goal in BY2023 to more than 90 percent of the goal in PY2024. The performance difference between energy savings and demand goals decreased markedly in PY2024. EAL's planning process better aligned energy savings and demand savings for the PY2024−PY2026 program cycle. An overarching theme from program design and delivery staff interviews is that the cost of energy efficiency is increasing as baselines are increasing (e.g., the recent impacts on lighting), and uncertainty around federal funding, coupled with persistent inflationary pressures, is also affecting project costs and customer decision-making.

Individual program performance relative to program savings and demand goals varied. Six of the ten programs[7] achieved or exceeded their megawatt-hour savings goals. Four programs did not reach their energy savings goals; these four programs ranged between 51 percent and 97 percent of energy savings goals. Three of 12 programs achieved their megawatt goals; 3 programs met 90 percent or more of the demand savings goal; and 5 met less than 90 percent of the demand savings goal, including the Smart Direct Load Control pilot. The performance of EAL's overall portfolio achieved 99.3 percent of energy and 90.6 percent of demand goal savings.

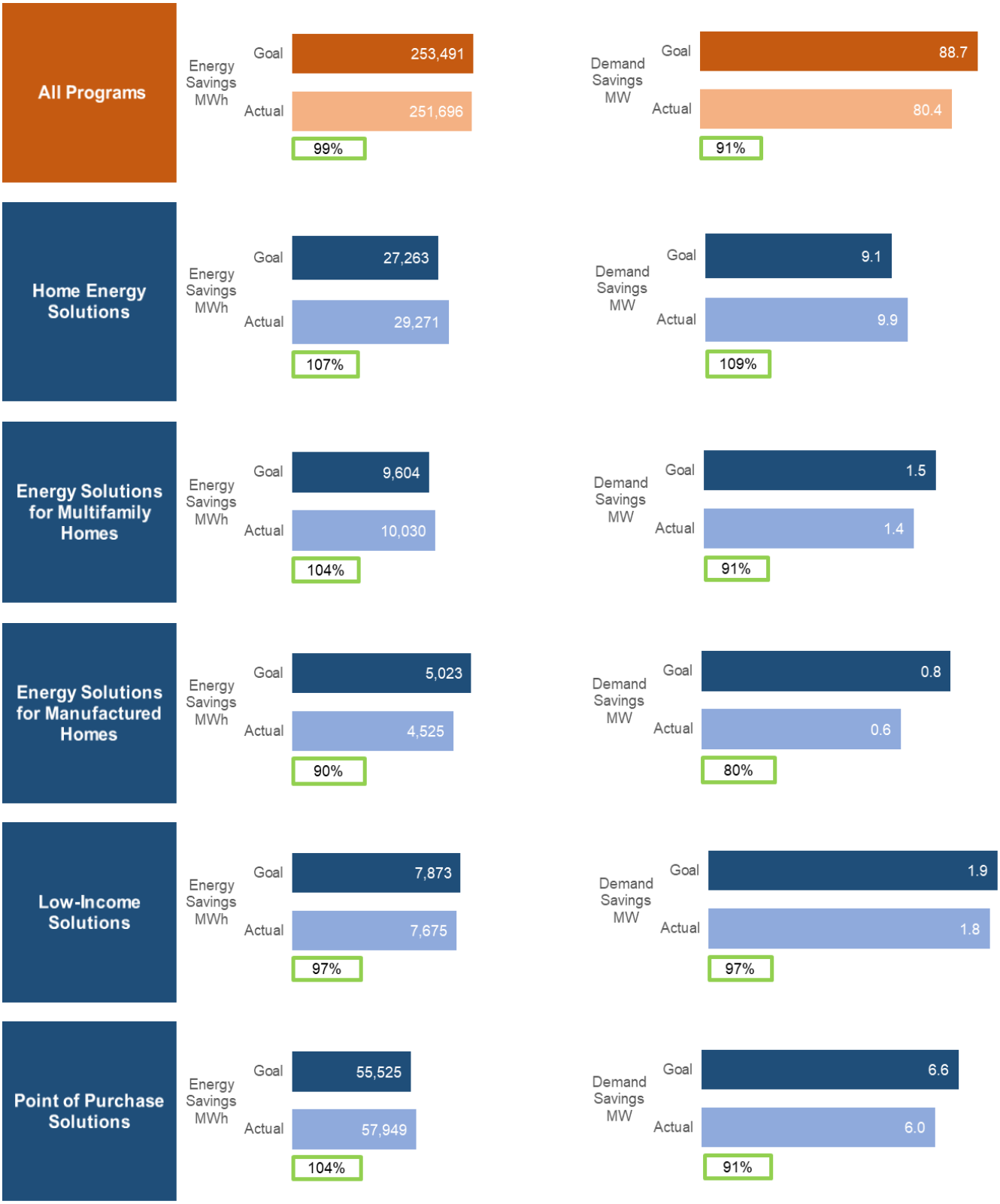
The Smart Direct Load Control pilot built on improvements in BY2023 to meet 76 percent of its energy savings and 49 percent of its demand reduction goals. Residential program performance against the energy savings goal was stronger, with Energy Solutions for Manufactured Homes achieving 90 percent of its goal and Low-Income Solutions meeting 97 percent of the energy savings goal; both Home Energy Solutions (107 percent) and Multifamily Homes (104 percent) exceeded goal savings. Two of EAL's three downstream commercial programs met planned goals, led by Public Institution Solutions (108 percent) and followed by Large C&I (101 percent). The Agricultural Energy Solutions program (119 percent) also exceeded goal savings.

Figure 2 shows the portfolio's total performance relative to program goals, followed by each program's achieved savings relative to program goals.

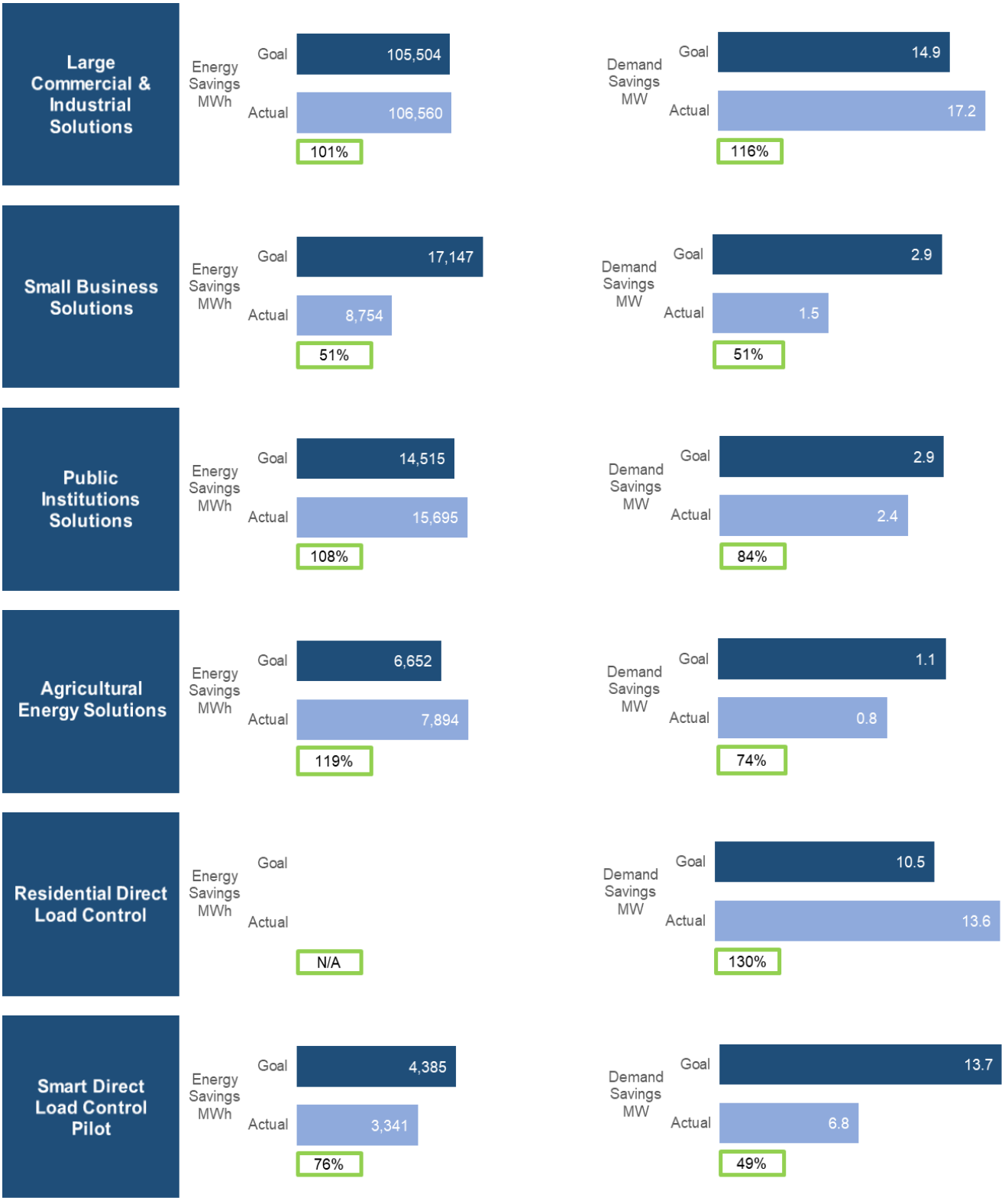
[7] Residential Direct Load Control and Agricultural Irrigation Load Control programs had no megawatt-hour savings goals.

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Figure 2. PY2024 Achieved Savings Relative to Program Goals—Overall and by Program



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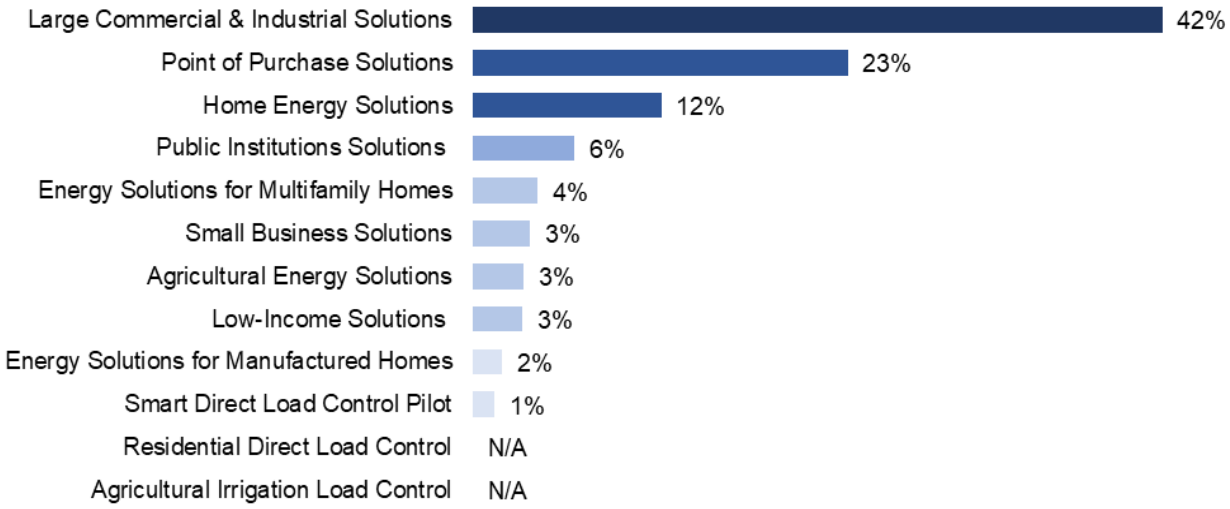
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Figure 3 shows each program's contribution toward the total portfolio's net energy savings. Large Commercial and Industrial (C&I) Solutions and Point of Purchase Solutions are the two most significant contributors toward energy savings goals, contributing 42 percent and 23 percent of total portfolio energy savings, respectively. While these two programs were also the largest contributors in the BY2023 evaluation, the contribution from Point of Purchase Solutions is seven percentage points lower in PY2024. This decrease is largely offset by greater contributions from Large C&I Solutions and Home Energy Solutions, which increased by four percentage points and two percentage points, respectively.

Notably, 21 percent of portfolio savings are achieved through successfully reaching harder-to-reach sectors. EAL employs best practices in its portfolio design by including programs that specifically address the barriers to energy efficiency in these harder-to-reach sectors (public institutions, small businesses, agriculture, multifamily, low-income, and manufactured homes).

Figure 3. EAL PY2024 Program Contribution to Total Portfolio Kilowatt-Hour Energy Savings*

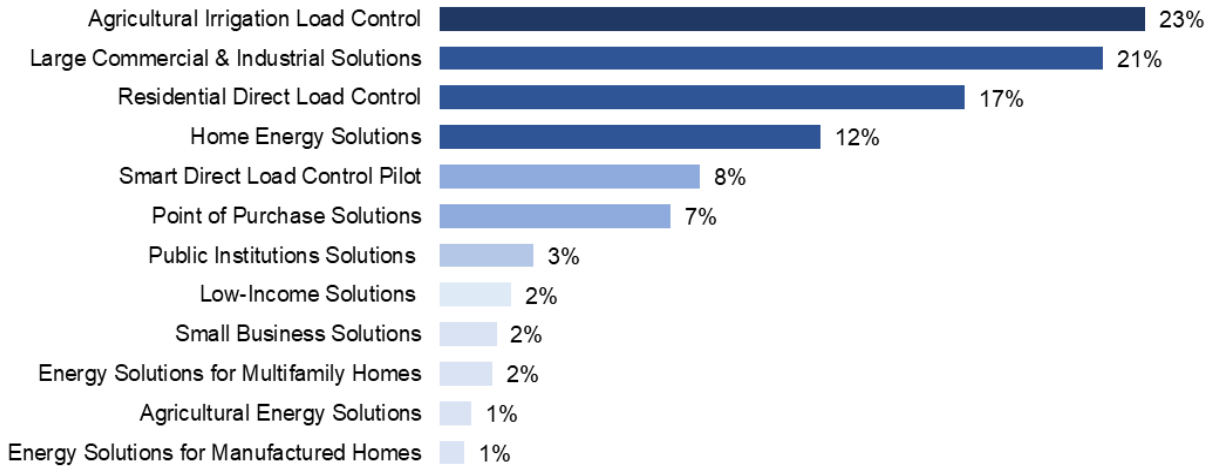


*Results are rounded to the nearest whole number and may not sum to 100 percent as a result.

Figure 4 shows each program's contribution toward the total portfolio's net demand savings. The Agricultural Irrigation Load Control and Large C&I Solutions programs were the most significant contributors to net demand savings, accounting for 23 percent and 21 percent of kilowatt savings, respectively. EAL's Residential Direct Load Control program was the third-highest contributor, with 17 percent kilowatt savings, followed by Home Energy Solutions, which had 14 percent kilowatt savings. These findings differ somewhat from the BY2023 evaluation, in which the top three contributors to demand savings were the Residential Direct Load Control program (21 percent of overall kilowatt savings), the Agricultural Irrigation Load Control program (20 percent), and the Point of Purchase Solutions program (15 percent).

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Figure 4. EAL PY2024 Program Contribution to Total Portfolio Kilowatt Demand Savings*



*Results are rounded to the nearest whole number and may not sum to 100 percent as a result.

Overall, evaluated savings were close to matching claimed energy savings with an overall portfolio gross realization rate of 99 percent for energy savings and 97 percent for demand reductions, as detailed in Table 2. Program-level gross realization rates ranged from 97 to 100 percent for energy savings and 75 to 104 percent for demand savings. Net savings are calculated based on multiplying evaluated gross savings by an NTG ratio that estimates the percentage of savings attributable to the program. We calculated NTG for all residential and C&I programs (outside of demand response, deemed from industry standard) at least once throughout the program cycle. NTG remains strong across all programs, with most savings directly attributable to the programs and an overall portfolio NTG ratio of 97 percent, a slight decrease from last year's 99 percent. While the Point of Purchase Solutions, Public Institutions Solutions, Agricultural Energy Solutions programs, and the Smart Direct Load Control pilot had NTG ratios under 100 percent, all remaining programs had NTG rates of at least 100 percent. As shown above, the Large Commercial and Industrial Solutions program is the largest contributor to overall portfolio savings in PY2024.

Table 2. EAL PY2024 Gross Savings and Realization Rates[8]

Program	Reported kWh	Evaluated kWh	Gross realization rate (kWh)	Reported kW	Evaluated kW	Gross realization rate (kW)	NTG (kWh)
Home Energy Solutions	29,414,097	29,278,449	99.5%	10,046	9,881	98.4%	100%
Energy Solutions for Multifamily Homes	10,187,712	10,030,476	98.5%	1,366	1,360	99.6%	100%
Energy Solutions for Manufactured Homes	4,684,102	4,525,460	96.6%	647	640	98.9%	100%

[8] Results are rounded to the nearest whole number.

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Program	Reported kWh	Evaluated kWh	Gross realization rate (kWh)	Reported kW	Evaluated kW	Gross realization rate (kW)	NTG (kWh)
Low-Income Solutions	7,953,946	7,675,406	96.5%	1,887	1,848	97.9%	100%
Point of Purchase Solutions	66,792,781	66,340,673	99.3%	6,937	6,970	100.5%	87%
Large Commercial & Industrial Solutions	106,131,237	105,726,536	99.6%	16,391	17,103	104.3%	101%
Small Business Solutions	8,897,374	8,756,913	98.4%	1,546	1,467	94.9%	100%
Public Institutions Solutions	15,962,447	15,889,237	99.5%	2,499	2,465	98.7%	99%
Agricultural Energy Solutions	7,973,826	7,973,826	100.0%	825	825	100.0%	99%
Residential Direct Load Control*	-	-	N/A	14,109	13,644	96.7%	100%
Smart Direct Load Control Pilot	3,801,924	3,803,086	100.0%	9,065	6,753	74.5%	88%
Agricultural Irrigation Load Control*	-	-	N/A	18,321	18,328	100.0%	100%
Total portfolio	**261,799,446**	**260,000,062**	**99.3%**	**83,638**	**81,286**	**97.2%**	**97%**

* The Residential Direct Load Control and Agricultural Irrigation Load Control programs do not claim energy savings. Therefore, these cells are represented with a dash.

Evaluation results are positive with EAL and its implementers, demonstrating continuous improvement in its program design and delivery processes, tracking system, documentation, and savings tools. Evidence of this continuous improvement is an improvement in net savings, as demonstrated through an increase in the portfolio's NTG from 90 percent in PY2020 to 97 percent in PY2024, as EAL continues to effectively serve harder-to-reach segments. This increase resulted from specific outreach and expanded delivery to low-income households of energy-efficient products through downstream residential and upstream point-of-purchase programs as well as custom projects in the commercial sector.

Both EAL and its implementation contractors have been responsive to evaluation recommendations and engaged with the EM&V contractor throughout 2024. Continued technical assistance and collaboration between EAL, its program implementers, and the EM&V team supported the programs and facilitated healthy gross savings realization rates. The PY2024 evaluation effort identified recommendations to continue to stabilize realization rates in subsequent program years; increase the transparency, accuracy, and evaluability of program savings in the future; and develop process improvements to further program performance and satisfaction. The tables below summarize EAL's programs and pilot, overviewing key findings and recommendations from the PY2024 evaluation. EAL's status in completing BY2023 recommendations is documented in each program-specific section.

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Table 3. Home Energy Solutions—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	This program targets single-family residences and is delivered through a trained group of home performance contractors. The program offers a comprehensive home inspection with diagnostic testing performed by a qualified contractor and direct installation of low-cost measures. *Duct sealing* is often performed and represents the most significant contributor to savings. The program also delivers the consistent weatherization approach (CWA).
Key findings	• The program's gross evaluated energy savings were slightly higher than reported energy savings, and reported demand savings were slightly lower, with a realization rate of 99.5 percent and 98.4 percent (megawatt-hour and megawatt, respectively). • The program performed well, exceeding the energy goal (achieving 107 percent) and demand goal (109 percent).
PY2024 impact recommendations	• Continue to increase the internal quality assurance/quality control (QA/QC) process on the duct sealing measures to ensure all cooling and heating efficiency values are captured correctly. • Increase the internal QA/QC process to ensure that all *ceiling insulation* variables are captured correctly. • Collect documentation that clearly verifies the installation location of the *advanced power strip (APS)* or use *average APS* consistently. • Collect documentation that clearly verifies the condenser and blower power and the cooling capacity delivered. • Utilize the rated or measured capacity to calculate *AC/HP tune-up* savings. • Improve the collection of tune-up variables for efficiency loss calculation.

Table 4. Energy Solutions for Multifamily Homes—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	The program targets multifamily property owners and managers, as well as tenants. This program offers both no-cost direct installation measures (*low-flow showerheads, low-flow faucet aerators, and APS*) and incentivizes *envelope* and *weatherization* measures, including *AC and heat pump tune-ups*, *air infiltration*, and *duct sealing*.
Key findings	• The realization rates were a little lower than reported by the implementor at 98.5 and 99.6 percent realization rates for energy savings and demand reductions, respectively. • The program achieved its energy savings goals, achieving 104 percent of the planned energy goal. The program was short of its demand goals. While the program only achieved 91 percent of its demand goal, it is up from 41 percent last year.

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PY2024 impact recommendations	• Increase the internal QA/QC process on the duct sealing measure for AC with resistance heat and heat pump heating types to ensure all cooling and heating variables are captured correctly. • Collect documentation that clearly verifies the installation location of the *APS* or consistently use *average APS* in the program. • Utilize the rated or measured capacity to calculate *AC/HP tune-up* savings. • Heating type documentation should be collected for all projects where savings are dependent on the heating type. • Improve the collection of tune-up variables for efficiency loss calculation.

Table 5. Energy Solutions for Manufactured Homes—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	This program targets manufactured and mobile homeowners, landlords, and community managers. The program offers a combination of incentives for *direct-install* measures, *envelope* measures, and *education services*. The program has recruited and trained partnering contractors to provide complete turnkey program delivery services to this hard-to-reach customer segment.
Key findings	• The program's gross savings were slightly lower than reported energy savings and demand savings, resulting in realization rates of 96.6 and 98.9 percent (megawatt-hours and megawatts, respectively). • The program fell short of planning goals, achieving 90.1 percent of the energy savings goal and 80.0 percent of the demand savings goal.
PY2024 impact recommendations	• Continue internal QA/QC processes, as they largely appear to be working well in producing verifiable results and correctly inputting data. • Collect documentation that clearly verifies the installation location of the *APS* or consistently use *average APS* in the program. • Ensure QA/QC results and findings are incorporated to update savings calculation and ArchEE. • Improve the collection of tune-up variables for efficiency loss calculation.

Table 6. Low-Income Solutions—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	The Low-Income Solutions program targets eligible low-income households and customers aged 65 or older to reduce energy use and lower bills. As part of the Low-Income Solutions program, EAL offers the following services at no cost to qualifying customers: *home energy assessments* by qualified field technicians and direct installation of *LED bulbs*, *low-flow showerheads*, *faucet aerators*, *advanced power strips,* and *health and safety* measures. EAL also offers the following *weatherization* measures at no cost to the customer: *air sealing*, *duct sealing*, *ceiling insulation*, *advanced thermostats*, and *heat pump and AC tune-ups*. The program helps with home repairs to correct minor problems that may otherwise prevent the building from receiving weatherization upgrades or pose a health or safety risk.

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Key findings	• The program's gross evaluated savings were slightly lower than reported energy savings and demand savings, resulting in realization rates of 96.5 and 97.9 percent for energy savings (megawatt-hours) and demand savings (megawatts), respectively. • The program nearly achieved its energy and demand savings goals, achieving 97.5 percent of the energy savings goal and 97.2 percent of the demand savings goal.
PY2024 impact recommendations	• Collect documentation that clearly verifies the installation location of the *APS* or consistently use *average APS* in the program. • Ensure QA/QC results and findings are incorporated to update savings calculation and ArchEE. • Continue internal QA/QC processes to improve documentation and transparency and resolve discrepancies. • Utilize the rated or measured capacity to calculate *HP tune-up* savings. • Improve the collection of tune-up variables for efficiency loss calculation.
PY2024 process recommendations	• Ensure all documentation, especially photo documentation, is clear and legible.

Table 7. Point of Purchase Solutions—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	EAL's midstream and upstream programs merged into the comprehensive Point of Purchase Solutions (POPS) program in PY2020. The program aims to provide fast, easy energy efficiency solutions to residential and nonresidential customers where they shop, discounting efficient lighting products, appliances, equipment, and building materials. Two advantages of this program design are that (1) it can ramp up quickly and (2) it is streamlined for residential customers because, for many measures, there is no application, and the discounts are applied at the point of sale. Cooperation with distributors and opening clear communication channels are critical for promoting measures incentivized through midstream channels.
Key findings	• The POPS program's evaluated savings resulted in energy and demand savings (99.3 percent kilowatt and 100.5 percent kilowatt-hour realization rates) similar to those calculated by the program implementer. The primary adjustment that decreased energy savings was related to the *exterior fixtures* in *midstream lighting*. The primary adjustment that increased energy savings was associated with *interior fixtures* in *midstream lighting*. • The evaluation team determined an overall NTG ratio of 87.4 percent for energy savings and 86.1 percent for demand savings. The lower NTG ratios are due to the large volumes of *weatherization* measures distributed through upstream retail channels and feedback from midstream lighting distributors and participants. The NTG ratios were applied for each measure at either the delivery channel or delivery channel/measure combination level. • The program exceeded planning goals for energy, achieving 104 percent of energy, but did not meet planning goals for demand, achieving 91 percent of demand savings.

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PY2024 impact recommendations	• Report delivery method of measures and low-income status within ArchEE. • Remove tube caulking products not intended for weatherizing residential doors and windows from the program. • Review employee zip codes at continuous energy improvement (CEI) events more carefully to ensure energy savings are not being claimed for products given to non-Entergy customers. • Adjust implementation and enhance QA/QC of *appliance recycling* measures to ensure eligibility guidelines are not violated. • Apply an in-service rate (ISR) of 0.60 to *weatherization* measures distributed via CEI corporate events. • Apply an ISR of 0.67 to *APSs* distributed via low-income giveaways; this was the *APS* ISR found through on-site verification for the Low-Income Solutions program.
PY2024 process recommendations	• Update the program manual to increase clarity. • Include more detailed installation instructions for all equipment provided to customers as part of giveaways, kits, or the marketplace. For the new mover kit, renters may find it difficult to understand how to use the sealer and caulk in their rental, so instructions specific to that group may be beneficial. • Provide distributors and retailers with annual updates at the start of the program year. • Review the time to mail the rebate for the mail-in rebate component. • Collect phone numbers from appliance recycling participants.

Table 8. Large Commercial & Industrial Solutions—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	This program provides a solution for nonresidential customers interested in purchasing energy-efficient technologies that can produce verifiable savings through a calculated (prescriptive) or a measured and verified (custom) approach. The program is available to all EAL LCI customers with a peak electric demand of over 100 kW at either one site or multiple sites owned by the same company. Additionally, the program is available to all commercial new construction customers. The program design generates high energy savings and longer-term market penetration by nurturing delivery channels such as design professionals, distributors, contractors, and energy service companies.
Key findings	• Overall, the LCI program evaluated savings resulted in slightly lower energy savings (99.6 percent kilowatt-hour realization rate) and higher demand savings (104.3 percent kilowatt realization rate) than those calculated by the program implementer. • The program achieved its planning goals for PY2024, achieving 101.0 percent of the energy savings goal and 115.6 percent of the demand savings goal. • Provide distributors and retailers with annual updates at the start of the program year.

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PY2024 impact recommendations	• Increase QA/QC on measure calculations and data transcriptions. • Ensure baseline HVAC efficiencies are using values from the current federal standard. • Review savings algorithms for *Wi-Fi thermostat* measures to ensure consistency. • Update savings calculations for *lighting* retrofit projects with existing controls.

Table 9. Small Business Solutions—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	This program offers small commercial customers cash and non-cash incentives for implementing energy efficiency improvements. The program assists small business customers by analyzing facility energy use and identifying energy efficiency improvement projects. The program targets small business customers with a peak electric demand of less than 100 kW. Trade allies are responsible for analyzing customers' energy use, identifying energy efficiency improvement projects, and installing the recommended measures.
Key findings	• The Small Business Solutions program's evaluated energy and demand savings were lower than the program implementer's savings for both energy savings (98.4 percent kilowatt-hour realization rate) and demand savings (94.9 percent kilowatt realization rate). • The main drivers of the realization rates were adjustments to *lighting* projects during the desk review and on-site review process. The most significant adjustment was for a *lighting* project that used the incorrect *building type* and assigned an exterior light as *interior*. The other sources of lighting adjustments included quantity, retrofit lighting wattage, and baseline lighting fixture type. • The program did not meet its planning goals, achieving 51.1 percent of the energy savings goal and 50.6 percent of the demand savings goal.
PY2024 impact recommendations	• Increase QA/QC on *building type* selection for *lighting retrofit* projects. • Increase QA/QC on *baseline* and *retrofit lighting fixture* quantities. • Review savings algorithms for *Wi-Fi thermostat* measures to ensure consistency. • Include *lighting* specification sheets for some fixtures in the project documentation.

Table 10. Public Institutions Solutions—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	This program offers small commercial customers cash and non-cash incentives for implementing energy efficiency improvements, targeting governments, government-owned institutions, and public-private education entities with a peak electric demand of less than 100 kW. Trade allies are responsible for analyzing customers' energy use, identifying energy efficiency improvement projects, and installing the measures.

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Key findings	• The program's evaluated savings resulted in slightly lower energy savings (99.5 percent kilowatt-hour realization rate) and slightly lower demand savings (98.7 percent kilowatt realization rate) compared to those calculated by the program implementer. • The program achieved the energy savings goal (108 percent) but fell short of the demand savings goal (84 percent) for PY2024.
PY2024 impact recommendations	• Enhance QA/QC procedures. • Review savings algorithms for *Wi-Fi thermostat* measures to ensure consistency. • Review savings algorithms for *commercial AC post-test out* measures to ensure reported savings are being calculated properly.

Table 11. Agricultural Energy Solutions—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	This program offers a combination of farm audits, custom and prescriptive incentives, and education to agricultural suppliers. The program has focused on poultry farm *lighting* projects, although it has expanded to include *irrigation pump* and *horticulture* measures.
Key findings	• The program's evaluated savings resulted in 100.0 percent realization rates for energy and demand savings. • The program exceeded the energy savings goal, achieving 118.7 percent of planned savings. Demand savings achieved 74.3 percent of the total goal.
PY2024 impact recommendations	• Continue to work collaboratively with the EM&V team and seek review of large or unique *custom* projects. • Collect photo documentation on-site when able. • Define additional measure descriptions to ArchEE to clarify measure type as the program expands with new measure offerings beyond *lighting*.

Table 12. Residential Direct Load Control—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	The Residential Direct Load Control program focuses on residential air-conditioning loads and cycles a participant's home central air conditioning condenser during called demand-response events. A turnkey implementation contractor delivers the program by utilizing *radio technology*.
Key findings	• The program achieved 13.6 MW in gross demand savings, approximately 130 percent of the planning goal. • The evaluation team's savings calculations resulted in slightly lower demand savings than those provided by the program implementer, resulting in a realization rate of 96.7 percent.
PY2024 impact recommendations	• Consider analyzing the two curtailment strategies separately.
BY2024 process recommendations	• Consider an annual communication before the event season to thank customers for their continued participation and remind them of the financial benefits.

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Table 13. Smart Direct Load Control Pilot—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	The Smart Direct Load Control (SDLC) pilot coordinates with a participant's thermostat during demand-response events. The program offers residential and small commercial customers rebated *smart thermostats* or the opportunity to enroll an existing *smart thermostat* to participate in demand-response events during the load control season.
Key findings	• Realization rates for energy savings were 100.0 percent for *residential smart thermostats* and 100.1 percent for *commercial smart thermostats*. • Realization rates for demand savings were 74.5 percent for *smart thermostats* installed in both residential and commercial applications. • This program most underperformed in relation to its planning goal, only achieving 49 percent of planned demand reductions.
PY2024 impact recommendations	• Develop a method to identify unenrolled thermostats in tracking data.

Table 14. Agricultural Irrigation Load Control—PY2024 Summary Evaluation, Measurement, and Verification Findings and Recommendations

Program summary	The Agricultural Irrigation Load Control (AILC) program pays participants incentives in return for allowing EAL to interrupt their pumping loads (also referred to as a *curtailment event* or a *scheduled event*) during summer peak loads. The load control season runs from June 1 through August 31 each year. The target market is customers with large motors used in agriculture.
Key findings	• The AILC program evaluated savings matched those calculated by the program implementer (realization rate of 100.0 percent). The implementer and the EM&V team use the Midcontinent Independent System Operator (MISO) symmetric multiplicative adjustment (SMA) baseline calculation, which is appropriate for registering savings with MISO. • The program fell short of its PY2024 planning goal, reaching 80.3 percent of its demand savings goal.
PY2024 impact recommendations	• Consider building a baseline of similar days from the entire summer.

1.2 TRM UPDATE RECOMMENDATIONS

Tetra Tech has identified the following TRM updates for consideration from the EM&V research:

Table 15. Technical Reference Manual Recommendations from PY2024 Evaluation

Existing measures	
2.6.1 Advanced power strips	Tetra Tech recommends reviewing the individual peripheral devices assumed under *whole system average*, as there may be outdated assumptions for the typical Arkansas home. Additionally, the number of devices assumed may be high compared with evaluation findings, averaging one to two devices plugged into the controlled outlets for both *home entertainment* and *home office* settings rather than three to four, as assumed by the TRM.

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2.0 INTRODUCTION

On August 1, 2023, Entergy Arkansas, LLC (EAL) filed its 2024–2026 Energy Efficiency Plan in response to Commission Order No. 68 in Docket No. 13-002-U. The Arkansas Public Service Commission (APSC) approved the 2024–2026 programs, which built upon EAL's comprehensive programs that have been implemented in Arkansas since 2011 and specifically the most recent 2020–2022 program cycle and additional bridge year (BY) 2023 (BY2023).

This report presents the evaluation, measurement, and verification (EM&V) results for EAL's energy efficiency programs implemented in PY2024. Following APSC Rules for Conservation and Energy Efficiency Programs (C&EE Rules), EAL selected an independent, third-party EM&V contractor. This evaluation effort aims to evaluate program impacts annually for all programs that provide kilowatt-hour or kilowatt savings.

The EAL PY2024 evaluation included impact and process analyses specified in the APSC rules and followed the Arkansas Technical Reference Manual (TRM) Version 9.2 (TRM 9.2) protocols and savings algorithms. Also, the EM&V team developed the program evaluation activities based upon discussions with EAL staff and its implementation contractors, reviews of program tracking and documentation, a review of prior years' EM&V efforts and EAL annual reports, and input from the independent evaluation monitor (IEM).

The remainder of this section overviews the EM&V team's evaluation approach. Section 3.0 discusses the overall portfolio results, including the Comprehensiveness Checklist. Sections 4.0 through 15.0 detail the EM&V results for each program, including specific discussions of evaluation methodologies. Section 16.0 details the consistent weatherization approach (CWA) results and participation in Act 1102 categories across residential programs based on BY2023 process evaluation results and PY2024 participation data. Finally, Section 17.0 presents the EM&V team's calculation of non-energy benefits (NEB), which was first included in EAL's programs in PY2016 in keeping with Commission Order No. 30. To foster complete transparency of all evaluation results in this report, the EM&V team has provided a separate Technical Appendix with desk review, on-site measurement and verification (M&V) details, confidence and precision calculations, and data collection instruments for EAL and the IEM.

2.1 EVALUATION APPROACH

In this section, we discuss the EM&V team's evaluation approaches for EAL within the following topics:

- impact evaluations,
- process evaluations,
- evaluation prioritization, and
- data collection activities.

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2.2 IMPACT EVALUATIONS

Our principal approach to the impact evaluation activities for EAL for PY2024 is to continue a similar approach to previous three-year program cycles, including:

- verify program tracking data and correctly apply the Arkansas TRM to the applicable program year to calculate savings following TRM 9.2 Volume 1 Protocol A;
- estimate gross- and net-energy and demand impacts at the measure, program, and portfolio levels;
    - adjust program-reported gross savings using the results of evaluation research, relying primarily on the tracking system, engineering desk reviews, and independent verification where impact parameters are deemed by the TRM and use metered data analysis and equipment metering where impact parameters are not deemed by the TRM;
    - update program net-to-gross (NTG) values with primary or secondary data research for every program once over the three-year program cycle, as well as review NTG ratios annually for any changes in the program design or measure mix following TRM 9.2 Volume 1 Protocol F; and
    - provide complete documentation and transparency of all evaluated savings estimates and, where relevant, comparison with TRM 9.2 calculations;
- provide ongoing technical reviews and guidance throughout the evaluation cycle;
- annually review tracking system data to assess data captured for new measure offerings following TRM 9.2 Volume 1 Protocol A;
- identify possible updates for the next version of the TRM; and
- calculate NEBs for the EAL portfolio.

The impact evaluations resulted in defensible lifetime and annual estimates of gross and net energy and demand impacts and adhered to TRM 9.2 Volume 1, Protocols B1, B2, and B3. Impact evaluations were used to calculate realization rates, determined by dividing evaluated savings by EAL-tracked savings. PY2024 primarily included a combination of the tracking system and desk reviews, metered data analysis, and independent verification. When determining the appropriate activities to be completed by program and measure type, the EM&V team considered key factors that included a contribution toward savings and level of savings uncertainty (TRM 9.2 Volume 1 Protocol D) to identify high-priority measures and programs where more rigorous impact evaluation activities were beneficial. Sampling strategies were developed as part of program-level research plans following TRM 9.2 Volume 1 Protocol B4.

While implementing the impact evaluations, issues that could introduce potential bias and uncertainty were addressed and minimized. Evaluations can have biases in their results for many reasons. It is important to assess that no significant systematic non-random errors are embedded in the data that would bias the evaluation results. The EM&V team made every effort to identify and address any potential biases occurring due to (1) measurement errors resulting from inaccurate meters or errors in recording data, (2) collection errors arising from non-representative sampling, (3) sampled participant's refusal to participate in an on-site visit, (4) biased responses or interpretation of responses, (5) poor questionnaire design, (6) failure to take behavioral factors into account, (7) modeling errors from the incorrect specification of

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relationships between variables, (8) improperly included or excluded information or data, and (9) other modeling deficiencies.

In addition to mitigating the biases, the impact evaluation activities conducted by the EM&V team increased the confidence of results and reduced uncertainty by employing appropriate sampling approaches and reporting confidence intervals. A confidence interval is a range of values that describes an estimate's uncertainty. Confidence intervals are one way to represent how good an estimate is; the more extensive a confidence interval for an estimate, the more caution is required when using the point estimate.

Demand-side management program evaluations routinely employ 90 percent confidence intervals with ±10 percent as the industry standard (90/10). The 90 percent in the confidence interval represents a level of certainty about the estimate. If we were to repeatedly obtain new estimates using the same procedure (by drawing a new sample, conducting new interviews, and calculating new estimates and new confidence intervals), the confidence intervals would contain the average of all the estimates 90 percent of the time. The EM&V team activities reflect a minimum confidence interval of 90 percent ±10 percent at the sector and program level for evaluated savings estimates. Achieved confidence levels are included in the Technical Appendix to this report.

2.3 PROCESS EVALUATION

Our approach to process evaluation activities for EAL's portfolio of programs was to:

- gain an in-depth understanding of program operations, challenges, and evaluation needs through staff interviews with EAL and the implementation contractors at the beginning and throughout the evaluation cycle, followed by biweekly calls to stay abreast of program status issues;
- document EAL's progress in incorporating recommendations identified during the BY2023 evaluation following TRM 9.2 Volume 1, Protocol C;
- assess EAL's success in achieving the goals and objectives established in the APSC's Comprehensiveness Checklist;
- follow TRM 9.2 Volume 1, Protocol C, and conduct a comprehensive process evaluation for every program once over the three-year program cycle and assess other process evaluation needs annually;
- assess and document the effectiveness of program quality assurance and quality control (QA/QC); and
- assess and document the effectiveness of integrating the CWA, highlighted in TRM 9.2 Volume 1, Protocol C1.

Savings and cost-effectiveness estimates alone do not entirely explain a program or portfolio's effectiveness. Other factors, including internal and external utility operations, program maturity, service provider and implementation contractor activities, and markets, can influence a program's effectiveness. Identifying program process improvements is an EM&V best practice.

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In general, process evaluations assess organizational and procedural aspects of programs; they also provide feedback on aspects of programs functioning well or areas in need of improvement. The EM&V team consulted and followed TRM 9.2 Volume 1, Protocol C, annually to determine whether conducting a process evaluation was appropriate for a specific program and the appropriate timing for the process evaluation. Specifically, Protocol C defines the required process evaluation criteria and the criteria to justify conducting a process evaluation (Table 16 provides details on specific criteria that trigger a process evaluation). Each program will receive a complete process evaluation at least once during the three-year PY2024–PY2026 program cycle.

Table 16. TRM 9.2 Volume 1, Protocol C: Process Evaluation Guidance

Criteria for process evaluations
Process evaluation is required if: • the program is new or modified, • no process evaluation has been undertaken during the current funding cycle, or • a change in program implementation occurred.
Process evaluation is potentially needed if: • program impacts are lower than expected, • goals (both informational and educational) are not being achieved, • rates of participation are lower or slower than expected, • the program's operational system is slow to get up and running, • the cost-effectiveness of the program is less than expected, or • participants (both customers and market actors) report problems or low satisfaction rates with the program.

In addition to all programs receiving a limited process evaluation through program staff interviews and program documentation review, for PY2024, the EM&V team conducted customer surveys for the following four programs: POPS, Large C&I, Residential Direct Load Control, and Smart Direct Load Control.

2.4 EVALUATION PRIORITIZATION

A critical component of the EM&V process is to develop a prioritization process for the program-specific plans to meet the most appropriate level of rigor for each program following the guidance in TRM 9.2 Volume 1, Protocol D. Several factors feed into these decisions:

- percentage of program contribution to the portfolio savings,
- level of uncertainty in estimated savings (with higher uncertainty of savings resulting in high priority),
- level and quality of existing programmatic QA/QC and verification data from site visits and metering,
- the potential of risk for future portfolio performance, and
- adherence to Arkansas TRM protocols or updated needs.

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The EM&V team's evaluation activities presented in the PY2024 Evaluation Plan[9] underpin the PY2024 results and reflect this prioritization process.

2.5 DATA COLLECTION ACTIVITIES

The data collection activities listed below were used to support the impact and process evaluations as relevant. All evaluation activities adhered to EM&V protocols, as defined in TRM 9.2 Volume 1. The majority of these activities collected primary data.

- **Program staff interviews.** The EM&V team interviewed EAL and implementation contractors' program staff as part of the evaluation planning process. Communication was maintained throughout the program cycle via biweekly meetings to understand program progress and any challenges or successes. Findings from these interviews informed the evaluation research, key findings, and recommendations (EM&V Protocol C3: Recommended Areas of Investigation in a Process Evaluation).
- **Participant interviews.** The EM&V team conducted participant surveys to collect data on program awareness and satisfaction, factors affecting participation, and demographic information (EM&V Protocol C3: Recommended Areas of Investigation in a Process Evaluation). For Large C&I, Smart Direct Load Control, and POPS, the interviews also included standardized enhanced self-report approach (SRA) batteries to estimate program attribution (EM&V Protocol B3: Recommended Protocols for Participant Net Impact Evaluation).
- **Database tracking review.** The EM&V team assessed each program's database and tracking information (EM&V Protocol A: Program Tracking and Database Development) and provided a census tracking system review of deemed savings measures against the applicable version of the TRM. This advance review also included information on non-energy benefits (NEB).
- **Sampling.** The EM&V team drew samples designed to meet precision levels at the program level for verification or a census of participants depending on the population size (EM&V Protocol B4: Sampling and Uncertainty Protocol).
- **Engineering and project file reviews.** This activity focused on the calculations and assumptions for savings, adherence to the TRM, and potential differences in the verified gross savings from the reported savings (EM&V Protocol D1: Using Deemed Savings Values and EM&V Protocol D2: M&V Protocols). The findings of the project file reviews informed the selection of commercial projects for additional on-site verification activities. After conducting the file reviews, a sample of sites was selected for on-site data collection, if applicable (EM&V Protocol B4: Sampling and Uncertainty Protocol). Factors that determine sampling and potential weighting include (1) the size of the projects relative to the average of the measure type population; (2) measure type contribution to the overall energy and demand savings; and (3) our experience with precision and confidence from prior EM&V. We factor other evaluation efforts, where available, for specific end-use measure groups.

[9] Entergy Arkansas, LLC Program Year 2024 Evaluation Plan, Tetra Tech, September 2024.

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- **Demand response programs.** There are no TRM protocols for demand response programs. Thus, the EM&V team followed industry-standard practices, essentially reviewing participant-interval-load data census. Periods ahead of, during, and following load interruption notices verify load reduction and persistence during demand-response events and provide comparisons to similar-condition non-interrupted baseline days to validate impact estimates. The Residential Direct Load Control (DLC), Smart DLC pilot, and the Agricultural Irrigation Load Control programs serve as load modifying resources for the Midcontinent Independent System Operator. We work with EAL to ensure consistency of evaluation across Arkansas utilities. Based on this work, the EM&V team will work with EAL to provide input to the IEM for a possible future TRM update.

On-site data collection, as well as data logging and spot measurements, are two primary data collection activities that we have leveraged in the past, and we recommend that EAL programs provide more extensive measurement and verification (M&V) activities. These data collection activities verify program impacts, as outlined in EM&V Protocol E: Protocols for Verification and Ongoing Modifications of Deemed Savings Values. Below, we summarize the data collected through on-site data collection, data logging, and spot measurements.

- **On-site data collection and independent verification.** Each site visit included a physical inspection of measures to gather information about the project for verification purposes. The site-specific M&V plan gathered detailed information and data specific to the project (EM&V Protocol D2: M&V Protocols). Inspection, monitoring, and interview results are included in the Technical Appendix of this report.
- **Commercial stipulated annual operating hours (AOH) verification.** We emphasized selecting independent verification projects that used stipulated AOH through the desk review process and developed a supplemental AOH Verification Guide (Verification Guide). The Verification Guide identified the general site operating schedule, including holidays and shutdowns and lighting control type, and verified that the annual hours of operation (AOH) reported by the site contact do not vary from those originally reported. Individual room information is provided in the ArchEE data extract and project documentation, making verification possible down to this level. The guide also intends to identify and request additional documentation, such as photos and building automation system (BAS) data, which could further verify lighting AOH.
- **Data logging and spot measurements.** The data logging discussion below includes our general approach to fieldwork supporting M&V projects. It does not necessarily reflect the plan for each program, as this is only needed for measures and projects with higher levels of uncertainty in savings. For details by program, please refer to the program-specific approaches later in this document.

The EM&V team obtains spot measurements of critical parameters such as amps, kilowatts, temperatures, and flow rates for projects that operate mainly at a steady state. These projects may include constant-speed fans and pumps or process heating or cooling systems that serve a constant load (EM&V Protocol D2: M&V Protocols, Option B: Retrofit Isolation: All Parameter Measurement). For projects with significant fluctuations, data logging or trend data may be used over one to two weeks. These projects would include, for example, compressed air, variable frequency drives, and controls projects. Data may be logged to determine run times, or it may include interval metering, where the loads are recorded at specific intervals as they vary throughout the day or week (EM&V Protocol D2: M&V Protocols, Option B - Retrofit Isolation: All Parameter Measurement).

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3.0 PORTFOLIO PERFORMANCE

This report section presents results for the portfolio overall, measure trend analysis, and overviews the energy burden analysis in progress to help Entergy Arkansas, LLC (EAL) in future program planning, as well as results of the Comprehensiveness Checklist.

3.1 PORTFOLIO RESULTS

In PY2024, EAL offered a portfolio of 11 energy efficiency programs and 1 pilot. Also, through its residential programs, EAL implemented the consistent weather approach (CWA), which provided a comprehensive range of customer options focused on energy efficiency and demand reduction coupled with education and training activities. EAL 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 reductions through its energy efficiency portfolio, which is discussed further in the Comprehensiveness Checklist.

EAL almost met its portfolio planning energy goals, achieving 99 percent (Figure 5) of the goal and 91 percent of the demand savings goals (Figure 6). However, the portfolio demand savings achievement increased by 36 percentage points from BY2023, which helped close the performance gap between energy and demand goals found in previous evaluations.

Individual program performance relative to program savings and demand goals varied. Six of the 12 programs[10] achieved their megawatt-hour savings goals; four other programs' energy savings goals ranged between 51 percent and 97 percent of their savings goals. Three of the 12 programs achieved their megawatt savings goals, with three additional programs meeting 90 percent or more of the demand savings goal. The Smart Direct Load Control pilot met 76 percent of its energy savings goal and 49 percent of its demand savings goal. The Agricultural Energy Solutions and Public Institutions Solutions programs were the highest performers across energy savings and demand reductions relative to program goals (119 percent and 108 percent, respectively).

[10] Residential Direct Load Control and Agricultural Irrigation Load Control programs had no megawatt-hour savings goals.

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Figure 5. PY2024 Percentage of Net Energy Megawatt-Hour Savings Goals Achieved

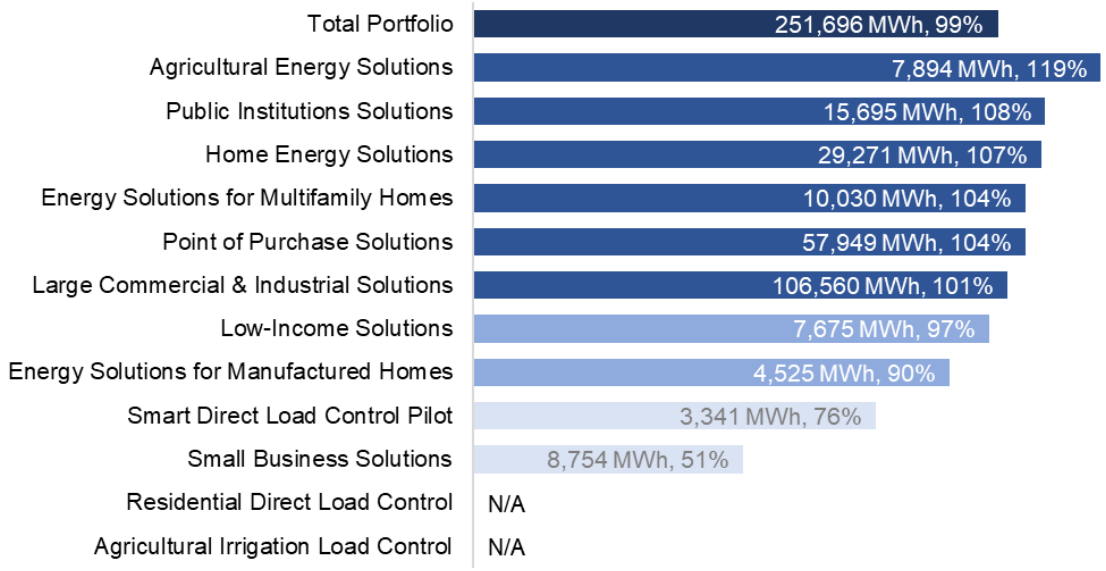
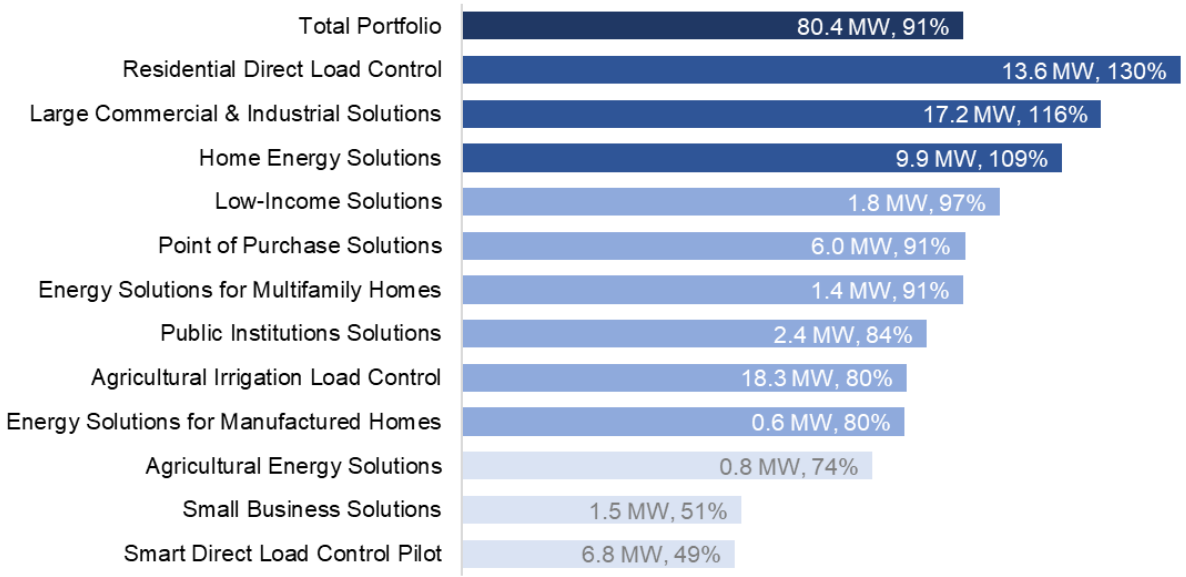


Figure 6. PY2024 Percentage of Net Demand Megawatt Savings Goal Achieved[11,12]



[11] Peak demand savings for all *non-load-control* measures and programs were determined using a peak demand definition of Monday—Friday, 1:00 p.m. to 8:00 p.m., June—September, determined in accordance with EAL.

[12] Demand-response program savings calculations follow the Midcontinent Independent System Operator's (MISO) methodology (explained in relevant event sections), which does not account for post-event snapback. Snapback is accounted for when calculating total energy savings.

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Overall, evaluated savings were slightly lower than claimed energy savings, with an overall portfolio gross realization rate of 99 percent for energy savings and 97 percent for demand reductions. Program-level gross realization rates ranged from 97 to 100 percent for energy savings and 75 to 104 percent for demand savings. Table 17 shows the reported and evaluated energy savings for EAL's portfolio by program for PY2024, and Table 18 shows the reported and evaluated savings for demand savings.

Table 17. EAL PY2024 Reported and Evaluated Energy Savings[13]

Program	Percentage portfolio net savings (kWh)	Reported energy savings (kWh)	Evaluated energy savings (kWh)	Gross realization rate (kWh)	Net-to-gross (NTG) ratio	Net evaluated energy savings (kWh)
Home Energy Solutions	12%	29,414,097	29,278,449	99.5%	100%	29,270,923
Energy Solutions for Multifamily Homes	4%	10,187,712	10,030,476	98.5%	100%	10,030,476
Energy Solutions for Manufactured Homes	2%	4,684,102	4,525,460	96.6%	100%	4,525,460
Low-Income Solutions	3%	7,953,946	7,675,406	96.5%	100%	7,675,406
Point of Purchase Solutions	23%	66,792,781	66,340,673	99.3%	87%	57,949,096
Large Commercial & Industrial Solutions	42%	106,131,237	105,726,536	99.6%	101%	106,560,257
Small Business Solutions	3%	8,897,374	8,756,913	98.4%	100%	8,754,457
Public Institutions Solutions	6%	15,962,447	15,889,237	99.5%	99%	15,695,269
Agricultural Energy Solutions	3%	7,973,826	7,973,826	100.0%	99%	7,894,088
Residential Direct Load Control*	N/A	-	-	N/A	100%	-
Smart Direct Load Control Pilot	1%	3,801,924	3,803,086	100.0%	88%	3,340,504
Agricultural Irrigation Load Control*	N/A	-	-	N/A	100%	-
Total portfolio	**100%**	**261,799,446**	**260,000,062**	**99.3%**	**97%**	**251,695,936**

* The Residential Direct Load Control and Agricultural Irrigation Load Control programs do not claim energy savings. Therefore, these cells are represented with a dash.

[13] Results rounded to the nearest whole number.

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Table 18 shows the reported and evaluated demand savings for EAL's portfolio by program for PY2024.

Table 18. EAL PY2024 Reported and Evaluated Demand Savings[14]

Program	Percentage portfolio net savings (kW)	Reported demand savings (kW)	Evaluated demand savings (kW)	Gross realization rate (kW)	NTG ratio	Net evaluated demand savings (kW)
Home Energy Solutions	12%	10,046.0	9,881.4	98.4%	100%	9,880.6
Energy Solutions for Multifamily Homes	2%	1,365.6	1,359.7	99.6%	100%	1,359.7
Energy Solutions for Manufactured Homes	1%	647.1	639.9	98.9%	100%	639.9
Low-Income Solutions	2%	1,886.8	1,847.6	97.9%	100%	1,847.6
Point of Purchase Solutions	7%	6,936.9	6,970.1	100.5%	86%	6,004.2
Large Commercial & Industrial Solutions	21%	16,390.9	17,103.1	104.3%	101%	17,223.3
Small Business Solutions	2%	1,545.6	1,467.5	94.9%	100%	1,467.0
Public Institutions Solutions	3%	2,498.6	2,465.5	98.7%	99%	2,435.4
Agricultural Energy Solutions	1%	825.4	825.4	100.0%	99%	817.1
Residential Direct Load Control	17%	14,109.0	13,643.7	96.7%	100%	13,643.7
Smart Direct Load Control Pilot	8%	9,064.8	6,753.4	74.5%	100%	6,753.4
Agricultural Irrigation Load Control	23%	18,321.1	18,328.4	100.0%	100%	18,328.4
Total portfolio	**100%**	**83,637.8**	**81,285.7**	**97.2%**	**99%**	**80,400.2**

Net savings are calculated based on multiplying evaluated gross savings by an NTG ratio that estimates the percentage of savings attributable to the program. NTG will be calculated for all residential, commercial, and industrial programs (outside of demand response, deemed as industry standard practice) at least once throughout the program cycle. NTG remains strong across all programs, with most savings directly attributable to the programs and an overall portfolio NTG ratio of 99 percent. Large Commercial and Industrial Solutions saw over 100 percent NTG ratios due to reported spillover where participants installed additional energy efficiency measures due to the program and is the largest program contributor to overall portfolio savings in PY2024. Table 19 shows the NTG factor and source used in the net evaluated savings for EAL's PY2024 programs.

[14] Results are rounded to the nearest tenth decimal place.

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Table 19. PY2024 Net-to-Gross Summary

Program	NTG ratio[15]	Source
Home Energy Solutions	100%	BY2023 EM&V research—participant surveys
Energy Solutions for Multifamily Homes	100%	PY2021 EM&V research—participant surveys and market actor interviews
Energy Solutions for Manufactured Homes	100%	PY2021 EM&V research—participant surveys and market actor interviews
Low-Income Solutions	100%	PY2020 EM&V research—participant surveys and market actor interviews
Point of Purchase Solutions	87%	PY2024 EM&V research—participant surveys and market actor interviews triangulated
Large Commercial and Industrial Solutions	101%	PY2024 EM&V research—primary data from the participant survey and trade ally interviews
Small Business Solutions	100%	PY2022 EM&V research—primary data from the participant survey and trade ally interviews
Public Institutions Solutions	99%	PY2022 EM&V research—primary data from the participant survey and trade ally interviews
Agricultural Energy Solutions	99%	PY2022 EM&V research— participant surveys
Residential Direct Load Control	100%	Deemed at 1.0 as industry practice
Smart Direct Load Control Pilot	88%	PY2024 EM&V participant surveys
Agricultural Irrigation Load Control	100%	Stipulated at 1.0 as industry practice
Portfolio	**97%**	

3.2 MEASURE TREND ANALYSIS

This section presents an analysis to assist EAL with program planning. Each EAL program targets a specific sector or subset of EAL's customers; however, the portfolio provides a wide range of energy efficiency measures to all customer classes across EAL's territory. This section summarizes and analyzes the measures offered by EAL since 2017.

3.2.1 Key Findings

The percentage of portfolio net energy savings coming from *lighting* measures has steadily decreased since 2017, going from almost 68 percent in 2017 to 17 percent in 2024.[16] On the commercial side, *continuous energy improvement (CEI)* continued annual increases in savings, contributing 20 percent of total portfolio savings as EAL and the program implementer work with a range of commercial customers to make operation and maintenance improvements in addition to capital improvements. *Duct sealing* was the next largest contributor, representing 13 percent of portfolio savings, and was successfully delivered to hard-to-reach sectors through EAL's

[15] NTG ratios are calculated based on the savings population. While kilowatt-hour and kilowatt NTG ratios are similar, the NTG calculated based on kilowatt-hours is shown.
[16] Lighting includes both *lighting* and *custom lighting* measures.

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downstream residential programs. Table 20 and Table 21 provide net energy savings and annual portfolio contribution by measure and year, while Figure 7 and Table 22 provide the percentage of total portfolio net energy savings across major measure categories and years.

Table 20. Portfolio Net Energy Savings (MWh) by Year[17]

Measure	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	166,793	151,108	137,763	129,489	121,011	117,738	101,453	36,889
CEI[18]	0	0	0	0	46,282	35,718	50,694	58,138
Duct sealing (HVAC)	20,430	23,677	23,585	34,601	36,871	37,759	36,894	32,060
Custom other	22,386	28,155	24,420	54,643	24,833	35,983	22,126	17,599
Advance power strip (APS)	2,466	2,921	10,480	11,486	18,697	11,695	18,119	22,347
Variable frequency drive (VFD)	1	0	0	0	0	0	9,960	945
Smart thermostat	4,731	7,235	10,042	20,995	15,477	4,210	9,954	14,168
AC/HP TU	5,355	7,873	1,321	2,420	2,392	3,498	8,331	10,685
Ceiling insulation	3,975	4,301	5,009	5,673	5,272	4,968	5,036	4,862
Custom HVAC	5,386	5,602	2,166	5,460	8,253	1,065	4,338	2,095
Air infiltration	3,132	3,421	3,612	5,124	4,686	4,095	3,865	4,959
Custom lighting	7,609	6,929	4,938	13,313	13,426	11,143	3,506	5,930
Overhead door weather stripping	0	0	0	0	0	0	1,823	1,136
Controls	0	0	0	0	0	0	1,605	1,964
Com. door air infiltration	3,055	3,436	59	0	0	0	1,431	341
PTAC sealing	0	0	0	0	0	0	1,192	2,615
AC/HP replacement	6,451	0	7,877	0	12	90	1,062	1,258
Low-flow showerhead	208	181	195	269	203	404	565	281
Appliance recycling	0	0	0	0	0	0	477	468
Refrigeration	3,532	2,084	1,044	576	204	984	152	1,135
Faucet aerator	32	121	25	54	42	56	137	139
HVAC	962	1,874	1,597	507	238	17,250	131	1,079
DHW	354	221	211	166	319	315	56	55
Pool pumps	120	152	437	334	307	117	45	14

[17] All tables and figures in this section exclude energy savings from demand response programs.
[18] CEI savings were included in Custom Other until 2021.

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Measure	2017	2018	2019	2020	2021	2022	2023	2024
HEBC	0	0	0	0	0	0	32	884
Weather stripping for refrigerated spaces	0	0	0	0	0	0	16	0
Air purifier	0	4	11	25	57	14	16	4,789
Pre-rinse spray valves	0	0	0	0	0	0	8	14
Weatherization	0	0	0	0	0	2	3	24,783
Dehumidifier	0	7	4	5	3	3	1	64
Freezers	0	0	0	0	0	0	0	0
Envelope	0	0	8,415	7,857	9,271	5,820	0	0
Other	0	0	0	0	85	0	0	0
Battery chargers	80	5	160	209	0	0	0	0
Clothes washer	26	19	4	0	0	0	0	0
ECM	0	0	291	0	0	0	0	0
HPWH	5	0	0	0	0	0	0	0
Motors	0	56	0	0	0	0	0	0
Total	**257,089**	**249,381**	**243,666**	**293,208**	**307,942**	**292,926**	**283,028**	**251,696**

Table 21. Percentage of Portfolio Net Energy Savings by Measure and Year

Measure	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	64.9%	60.6%	56.5%	44.2%	39.3%	40.2%	35.8%	14.7%
CEI	0.0%	0.0%	0.0%	0.0%	15.0%	12.2%	17.9%	23.1%
Duct sealing	7.9%	9.5%	9.7%	11.8%	12.0%	12.9%	13.0%	12.7%
Custom other	8.7%	11.3%	10.0%	18.6%	8.1%	12.3%	7.8%	7.0%
APS	1.0%	1.2%	4.3%	3.9%	6.1%	4.0%	6.4%	8.9%
Smart thermostat	1.8%	2.9%	4.1%	7.2%	5.0%	1.4%	3.5%	5.6%
VFD	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	<0.1%
AC/HP TU	2.1%	3.2%	0.5%	0.8%	0.8%	1.2%	2.9%	4.2%
Ceiling insulation	1.5%	1.7%	2.1%	1.9%	1.7%	1.7%	1.8%	1.9%
Custom HVAC	2.1%	2.2%	0.9%	1.9%	2.7%	0.4%	1.5%	0.8%
Air infiltration	1.2%	1.4%	1.5%	1.7%	1.5%	1.4%	1.4%	2.0%
Custom lighting	3.0%	2.8%	2.0%	4.5%	4.4%	3.8%	1.2%	2.4%
Overhead door weather stripping	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	<0.1%
Controls	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.8%

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Measure	2017	2018	2019	2020	2021	2022	2023	2024
Com. door air infiltration	1.2%	1.4%	<0.1%	0.0%	0.0%	0.0%	0.5%	<0.1%
DHW	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	<0.1%	<0.1%
Pool pumps	0.0%	0.1%	0.2%	0.1%	0.1%	<0.1%	<0.1%	<0.1%
HVAC	0.4%	0.8%	0.7%	0.2%	0.1%	0.3%	<0.1%	<0.1%
Refrigeration	1.4%	0.8%	0.4%	0.2%	0.1%	0.3%	<0.1%	<0.1%
Low-flow showerhead	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	<0.1%	<0.1%
Air purifier	0.0%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	1.9%
Faucet aerator	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
AC/HP replacement	2.5%	0.0%	3.2%	0.0%	<0.1%	<0.1%	<0.1%	<0.1%
Dehumidifier	0.0%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Freezers	0.0%	0.0%	0.0%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Weatherization	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	<0.1%	9.8%
PTAC sealing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	1.0%
Appliance recycling	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	<0.1%
HEBC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	<0.1%
Weather stripping for refrigerated spaces	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	0.0%
Pre-rinse spray valves	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	<0.1%
Envelope	0.0%	0.0%	3.5%	2.7%	3.0%	2.0%	0.0%	0.0%
Battery chargers	<0.1%	<0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Clothes washer	<0.1%	<0.1%	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
ECM	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
HPWH	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Motors	0.0%	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	0.0%	0.0%	0.0%	0.0%	<0.1%	0.0%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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Figure 7. Distribution of Portfolio Net Energy Savings by Measure Category and Year (2017−2024)

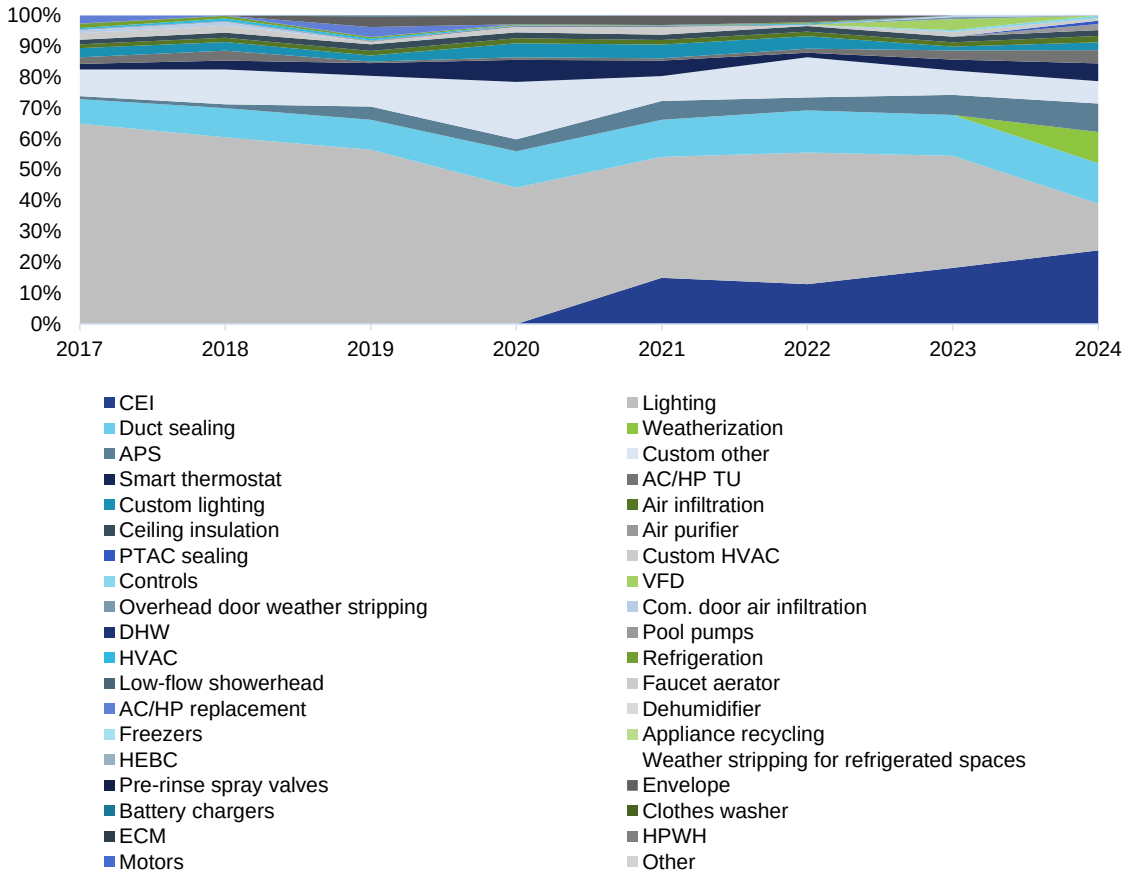


Table 22. Distribution of Portfolio Net Energy Savings by Measure Category and Year

Measure category	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	64.9%	60.6%	56.5%	44.2%	39.3%	40.2%	35.7%	14.7%
HVAC	6.9%	6.9%	8.7%	9.1%	6.6%	21.4%	19.8%	23.1%
CEI	0.0%	0.0%	0.0%	0.0%	15.0%	12.2%	17.9%	23.1%
Custom other	8.7%	11.3%	10.0%	18.6%	8.1%	12.3%	10.0%	8.6%
Other (APS)	1.0%	1.2%	4.3%	3.9%	6.1%	0.0%	6.4%	8.9%
Envelope	10.6%	12.5%	16.5%	17.3%	17.5%	5.1%	4.8%	15.4%
VFD	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	<0.1%
Custom lighting	3.0%	2.8%	2.0%	4.5%	4.4%	3.8%	1.2%	2.4%
Appliance	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	4.0%	<0.1%	2.1%
Compressed air	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	<0.1%
Custom HVAC	2.1%	2.2%	0.9%	1.9%	2.7%	0.4%	<0.1%	<0.1%
DHW	0.3%	0.3%	0.4%	0.3%	0.3%	0.3%	<0.1%	<0.1%

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Measure category	2017	2018	2019	2020	2021	2022	2023	2024
Other (HEBC)	<0.1%	<0.1%	0.1%	0.1%	<0.1%	0.0%	<0.1%	<0.1%
Refrigeration	1.4%	0.8%	0.4%	0.2%	0.1%	0.3%	<0.1%	<0.1%
Motors	0.0%	<0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	<0.1%
Com. door air infil.	1.2%	1.4%	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

3.2.2 Commercial Sector

For the first time, lighting measures were not the highest saving measure in the commercial sector, with CEI measures representing 40 percent of sector-level savings. Lighting measures continue a proportional decline, now representing 29 percent of sector-level savings in PY2024, down from 75 percent in 2017. Custom projects continue to provide meaningful savings, with 15 percent of commercial savings coming from custom projects in PY2024. Table 23 provides a full distribution of net energy savings by measure and year in the commercial sector, with Figure 8 and Figure 9 showing trends among commercial programs from 2017 through 2024.

Table 23. Percentage of Net Energy Savings by Measure and Year (kWh)
Commercial Programs

Measure	Percentage of net energy savings by measure and year (kWh)							
	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	70.2%	66.5%	65.9%	47.2%	35.6%	33.9%	33.9%	25.3%
CEI	0.0%	0.0%	0.0%	0.0%	25.5%	21.6%	31.3%	40.1%
Custom other	13.4%	16.2%	14.5%	28.2%	13.7%	21.8%	17.3%	14.9%
VFD	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	6.2%	0.7%
HVAC	4.2%	6.6%	9.2%	10.4%	7.8%	10.5%	6.1%	9.8%
Envelope	0.0%	0.0%	5.0%	4.1%	5.1%	3.5%	2.8%	2.8%
Custom lighting	4.6%	4.0%	2.9%	6.9%	7.4%	6.7%	2.2%	4.1%
Compressed air	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	0.7%
Custom HVAC	3.2%	3.2%	1.3%	2.8%	4.6%	0.6%	<0.1%	<0.1%
DHW	0.2%	0.2%	0.3%	0.1%	0.2%	0.2%	<0.1%	<0.1%
Refrigeration	2.1%	1.2%	0.6%	0.3%	0.1%	0.6%	<0.1%	0.7%
Other (HEBC)	<0.1%	<0.1%	0.1%	0.1%	<0.1%	0.0%	<0.1%	0.6%
Motors	0.0%	<0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	<0.1%
Other (APS)	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other (com door air infil.)	1.8%	2.0%	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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Figure 8. Distribution of Net Energy Savings by Measure and Year (2017−2024)
Commercial Programs

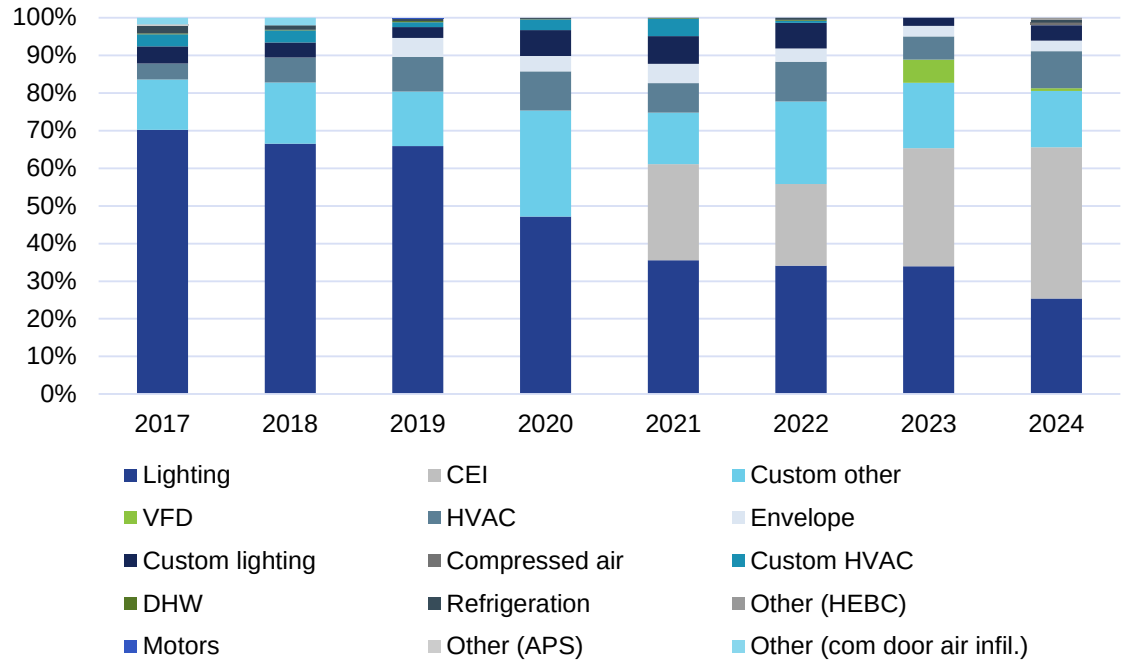
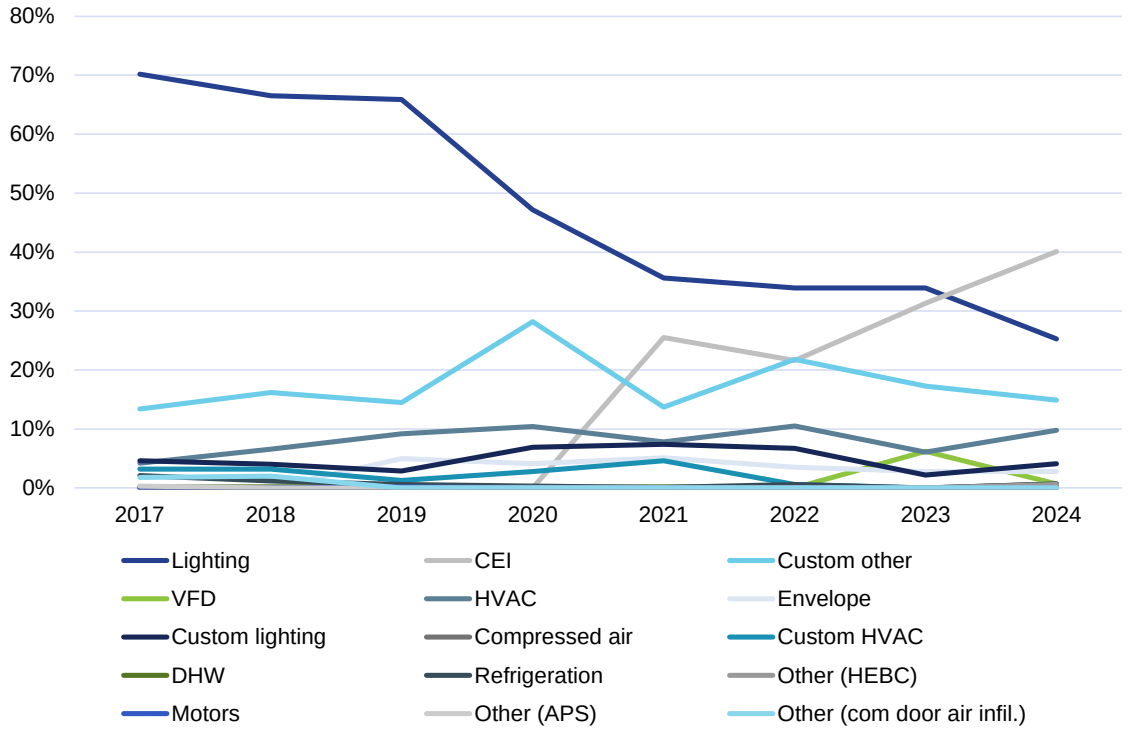


Figure 9. Net Energy Savings by Measure and Year (2017−2024)
Commercial Programs



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3.2.2.1 Agricultural Energy Solutions (AES)

Apart from 2019 and 2020, where one custom *VFD* project occurred in both years, all energy savings in the AES program came from custom lighting installations and retrofits until 2023 and again in 2024, when several *lighting control* projects occurred, as shown in Table 24. The program implementer reports that they are still pursuing *VFD* projects as part of the program design.

Table 24. Net Energy Savings by Measure and Year (kWh)
AES Program

Measure	2017	2018	2019	2020	2021	2022	2023	2024
Custom lighting	7,609,051	6,929,022	4,938,316	13,313,382	13,425,635	11,142,520	3,506,216	5,929,992
Custom VFD	0	0	37,461	24,669	0	0	0	0
Custom other	0	0	0	0	0	0	1,605,062	1,964,095
Total	**7,609,051**	**6,929,022**	**4,938,316**	**13,313,382**	**13,425,635**	**11,142,520**	**5,111,279**	**7,894,088**

3.2.2.2 Public Institution Solutions Offering (PISO)[19]

The PISO program has greatly decreased the amount of savings coming from *lighting* measures since 2019. As shown in Figure 10, *lighting* savings in 2017 contributed more than 95 percent of total program savings; in 2024, this decreased to 23 percent. In 2020 and 2021, *HVAC* measures contributed the highest proportion of net energy savings in PISO; however, in 2022, *HVAC* only accounted for three percent of savings. In 2024, *HVAC* (52 percent), *lighting* (23 percent), and *CEI* (23 percent) projects accounted for more than 94 percent of net energy savings.

[19] Includes CitySmart data pre-2020.

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Figure 10. Distribution of Net Energy Savings by Measure and Year (2017−2024) PISO

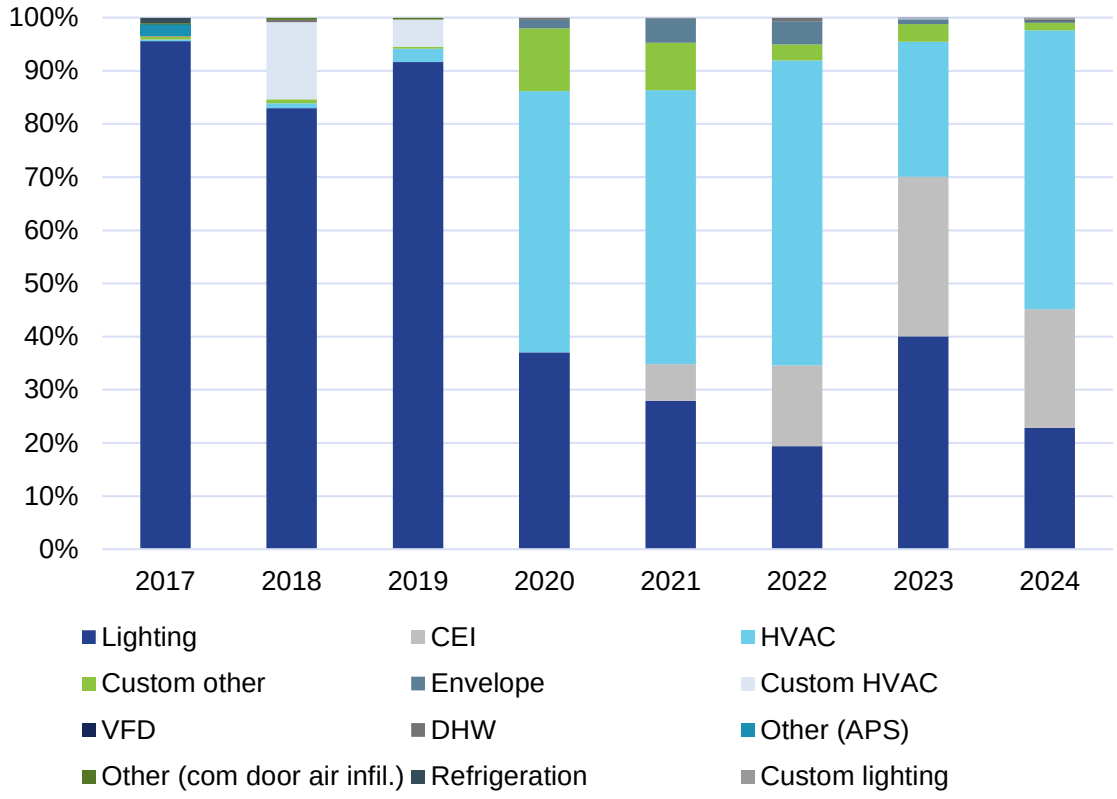


Table 25. Net Energy Savings by Measure and Year (kWh) PISO

Measure	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	19,060,779	20,841,597	15,876,758	9,016,732	5,650,769	3,728,282	6,736,970	3,583,084
CEI	0	0	0	0	1,389,771	2,921,962	5,058,582	3,507,312
HVAC	61,100	222,801	433,319	11,972,620	10,431,055	11,030,222	4,276,197	8,225,566
Custom other	112,181	187,003	71,245	2,876,196	1,810,040	570,965	550,912	225,118
Envelope	0	0	0	392,840	916,969	847,075	158,330	17,352
Custom HVAC	0	3,647,408	882,217	0	0	0	35,775	0
VFD	0	0	0	0	0	0	14,614	25,072
DHW	34,373	102,089	0	101,077	36,225	126,197	1,211	0
Other (APS)	418,009	0	0	0	0	0	0	0
Other (com door air infil.)	46,181	110,233	58,990	0	0	0	0	0

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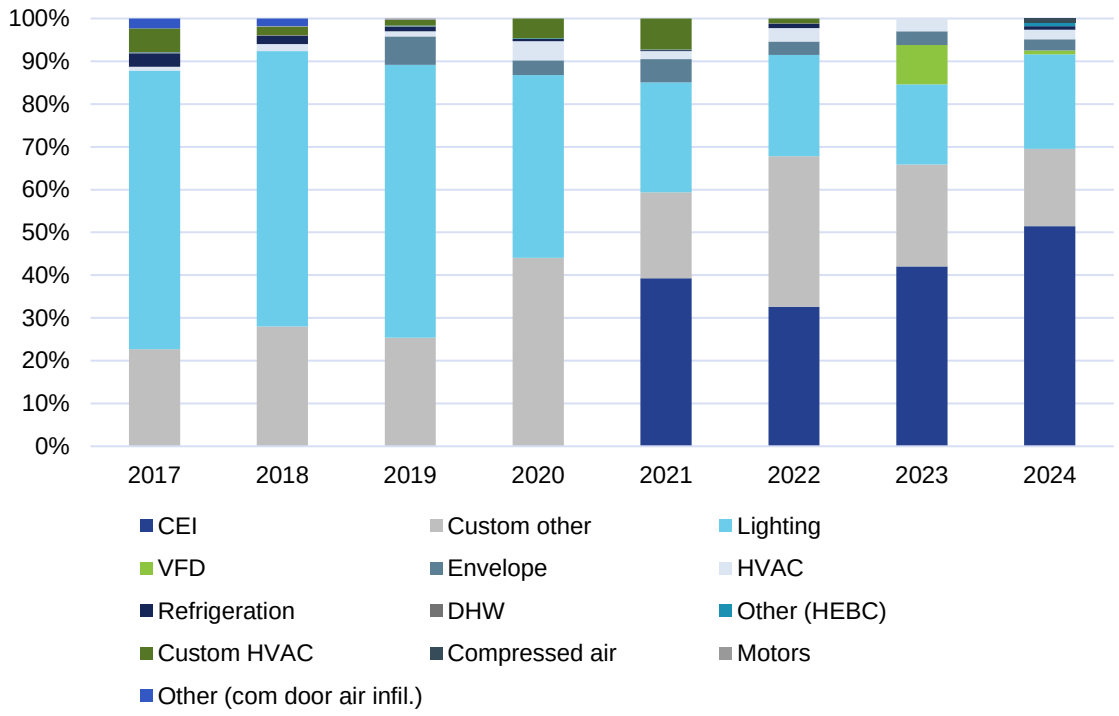
Measure	2017	2018	2019	2020	2021	2022	2023	2024
Refrigeration	208,080	0	0	0	0	0	0	38,783
Custom lighting	0	0	0	0	0	0	0	72,982
Total	**19,940,702**	**25,111,131**	**17,322,529**	**24,359,465**	**20,234,829**	**19,224,703**	**16,832,595**	**15,695,269**

3.2.2.3 Large Commercial and Industrial Solutions (Large C&I)

Continuous energy improvements continued increasing proportional savings in PY2024, with more than half of Large C&I savings come from CEI projects. Lighting measures remain important to the program, with 22 percent of program savings coming from lighting in PY2024. Custom projects remain important for the program, producing 18 percent of total program savings in PY2024. Figure 11 and

Table 26 provide details on the distribution of savings among Large C&I measures between 2017 and 2024.

Figure 11. Distribution of Net Energy Savings by Measure and Year (2017−2024)
Large C&I Program



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Table 26. Percentage of Net Energy Savings by Measure and Year (kWh)
Large C&I Program

Measure	2017	2018	2019	2020	2021	2022	2023	2024
CEI	0.0%	0.0%	0.0%	0.0%	39.2%	32.6%	41.9%	51.3%
Custom other	22.7%	28.0%	25.4%	44.0%	20.1%	35.2%	23.7%	18.0%
Lighting	65.1%	64.4%	63.8%	42.7%	25.7%	23.7%	18.7%	22.1%
VFD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%	0.9%
Envelope	0.0%	0.0%	6.6%	3.4%	5.4%	3.1%	3.2%	2.6%
HVAC	0.9%	1.6%	1.2%	4.5%	1.9%	3.2%	3.0%	2.2%
Refrigeration	3.2%	2.0%	1.1%	0.5%	0.2%	1.0%	<0.1%	0.8%
DHW	0.2%	0.1%	0.1%	<0.1%	0.1%	0.1%	<0.1%	<0.1%
Other (HEBC)	0.1%	<0.1%	0.2%	0.2%	0.1%	0.0%	<0.1%	0.8%
Custom HVAC	5.5%	2.0%	1.3%	4.6%	7.2%	1.1%	<0.1%	<0.1%
Compressed air	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	<0.1%	1.0%
Motors	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	<0.1%
Other (com door air infil.)	2.3%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

3.2.2.4 Small Business Solutions (Small Business)

The Small Business program remains dominated by *lighting* savings, with 55 percent of net savings coming from *lighting* installations in 2024, down from 82 percent in 2023. This represents the lowest proportional contribution of *lighting* savings in the program's history. *HVAC* projects added 28 percent of savings in PY2024, the first time the measure has exceeded 20 percent of total program savings. Figure 12 and Table 27 provide details on the distribution of savings among Small Business Solutions measures between 2017 and 2024.

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Figure 12. Distribution of Net Energy Savings by Measure and Year (2017−2024)
Small Business Solutions Program

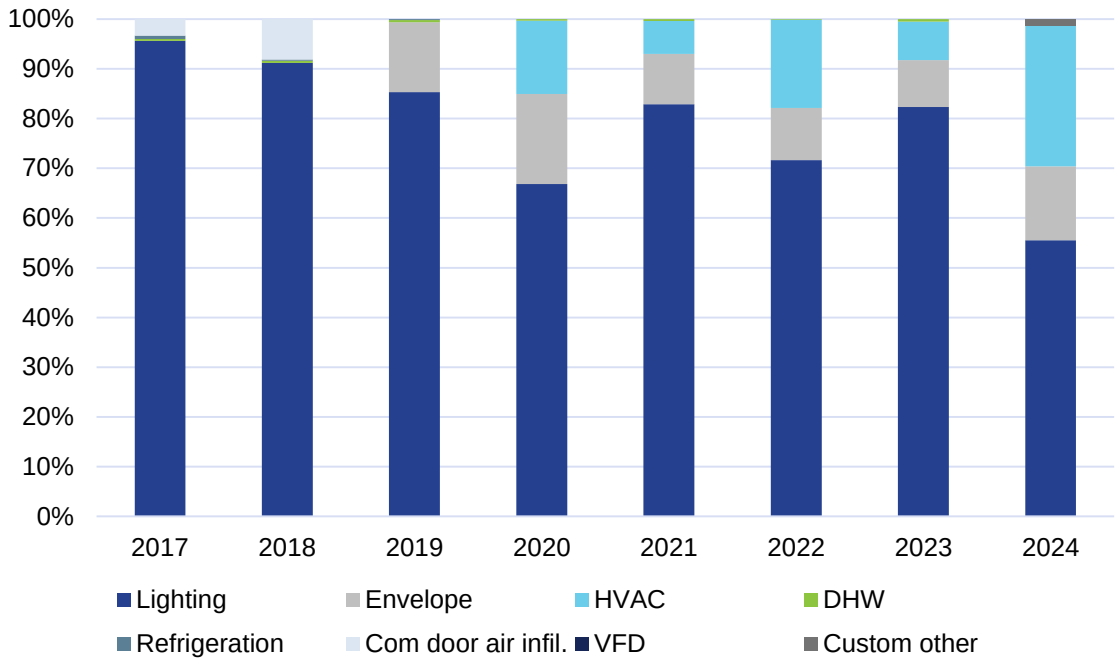


Table 27. Percentage of Net Energy Savings by Measure and Year (kWh)
Small Business Program

Measure	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	95.6%	91.2%	85.3%	66.9%	82.9%	71.7%	82.0%	55.2%
Envelope	0.0%	0.0%	14.1%	18.1%	10.1%	10.5%	9.4%	14.8%
HVAC	0.0%	<0.1%	0.0%	14.8%	6.6%	17.8%	7.7%	28.0%
DHW	0.4%	0.4%	0.4%	0.3%	0.4%	0.1%	0.5%	<0.1%
Refrigeration	0.7%	0.3%	0.2%	0.0%	0.0%	<0.1%	<0.1%	<0.1%
Com door air infil.	3.3%	8.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VFD	<0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Custom other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

3.2.2.5 Point of Purchase Solutions (POPS)—Midstream

The Commercial Midstream program, which merged into the POPS program in 2020, provides measures to commercial customers through participating distributors. While the Commercial Midstream program offered customers rebates for additional, *non-lighting* measures (i.e., *VFDs*), the commercial portion of the POPS program focused solely on *lighting* in PY2024. The program continues exploring additional measures to offer through its commercial offering in future years. Table 28 summarizes the programs' net savings since 2017.

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Table 28. Net Energy Savings by Measure and Year (kWh)
Commercial Midstream Lighting/POPS Programs

Measure	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	12,312,436	13,282,892	21,346,170	19,256,550	11,866,983	16,052,790	20,233,949	4,737,721
Pumps	0	38,656	252,103	0	0	0	0	0
Total	**12,312,436**	**13,321,548**	**21,598,273**	**19,256,550**	**11,866,983**	**16,052,790**	**20,233,949**	**4,737,721**

3.2.3 Residential Sector

The residential sector programs again had the most net energy savings from *HVAC* in 2024 (41 percent). Before BY2023, *lighting* measures and installations were always the highest savers. *Envelope* measures also provided significant savings in PY2024, at 32 percent of sector-level net savings. Table 29 provides a full distribution of net energy savings by measure and year in the residential sector, with Figure 13 and Figure 14 showing trends among residential programs from 2017 through 2024.

Table 29. Percentage of Net Energy Savings by Measure Category and Year (kWh)
Residential Programs

Measure	2017	2018	2019	2020	2021	2022	2023	2024
HVAC	11.8%	7.6%	7.5%	6.5%	5.0%	34.9%	38.7%	41.2%
Lighting	55.1%	46.9%	35.5%	38.3%	44.6%	48.3%	37.7%	<0.1%
Other (APS)	2.3%	3.9%	14.0%	11.5%	14.7%	9.2%	15.1%	21.0%
Envelope	30.3%	41.1%	42.4%	43.0%	35.1%	7.1%	7.4%	32.4%
DHW	0.4%	0.4%	0.6%	0.7%	0.5%	0.4%	0.6%	<0.1%
Appliance	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	0.1%	<0.1%	5.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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Figure 13. Distribution of Net Energy Savings by Measure and Year (2017−2024)
Residential Programs

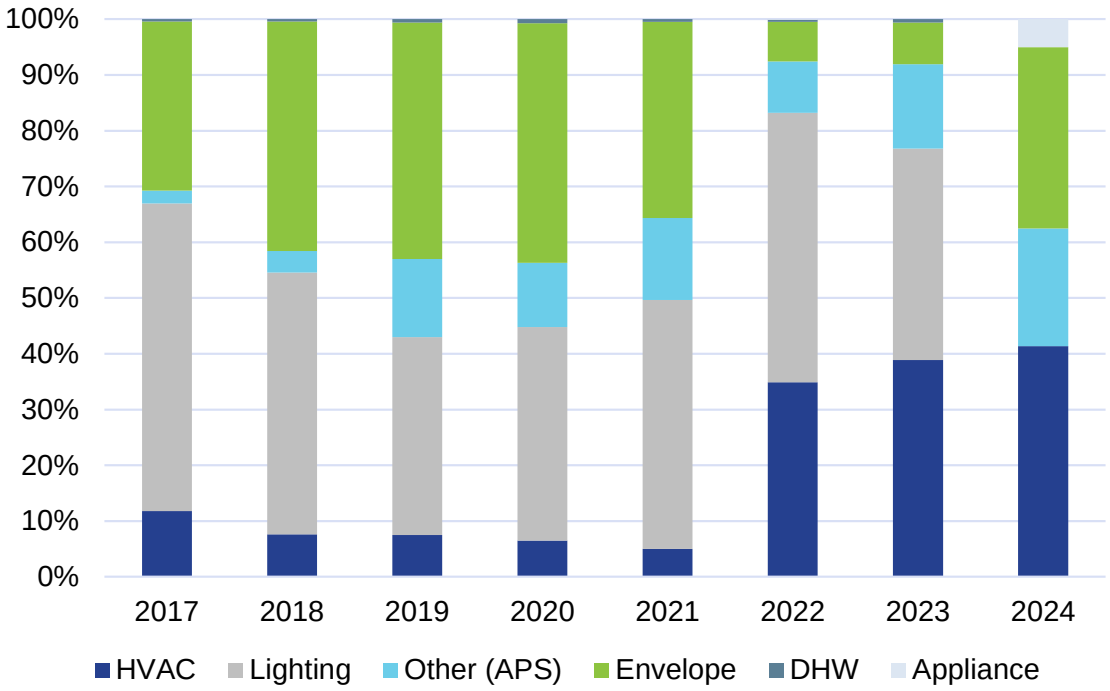
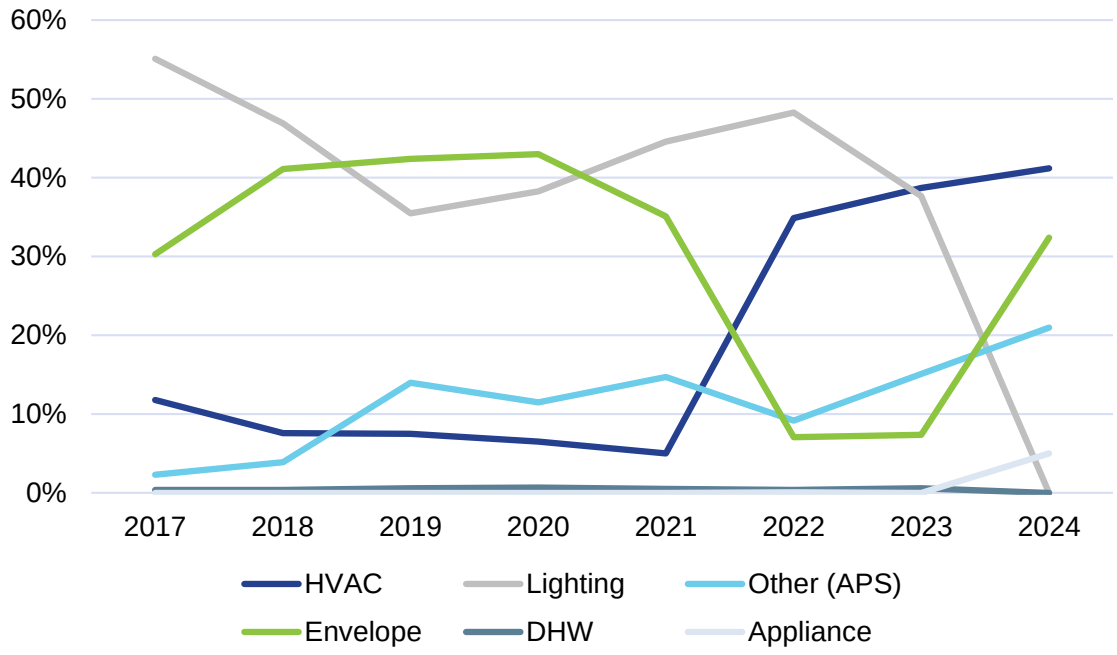


Figure 14. Net Energy Savings by Measure and Year (2017−2024)
Residential Programs



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3.2.3.1 Home Energy Solutions (HES)

The HES program was dominated by *envelope* savings between 2017 and 2021, contributing between 86 and 92 percent of HES savings each year. In 2024, much like 2022 and 2023, *envelope* savings decreased greatly, accounting for 20 percent of HES savings in PY2024. Seventy-nine percent of HES savings in 2024 came from *HVAC* projects, the largest contributor. Figure 15 and Table 30 provide details on the distribution of savings among HES measures between 2017 and 2024.

Figure 15. Distribution of Net Energy Savings by Measure and Year (2017−2024)
HES Program

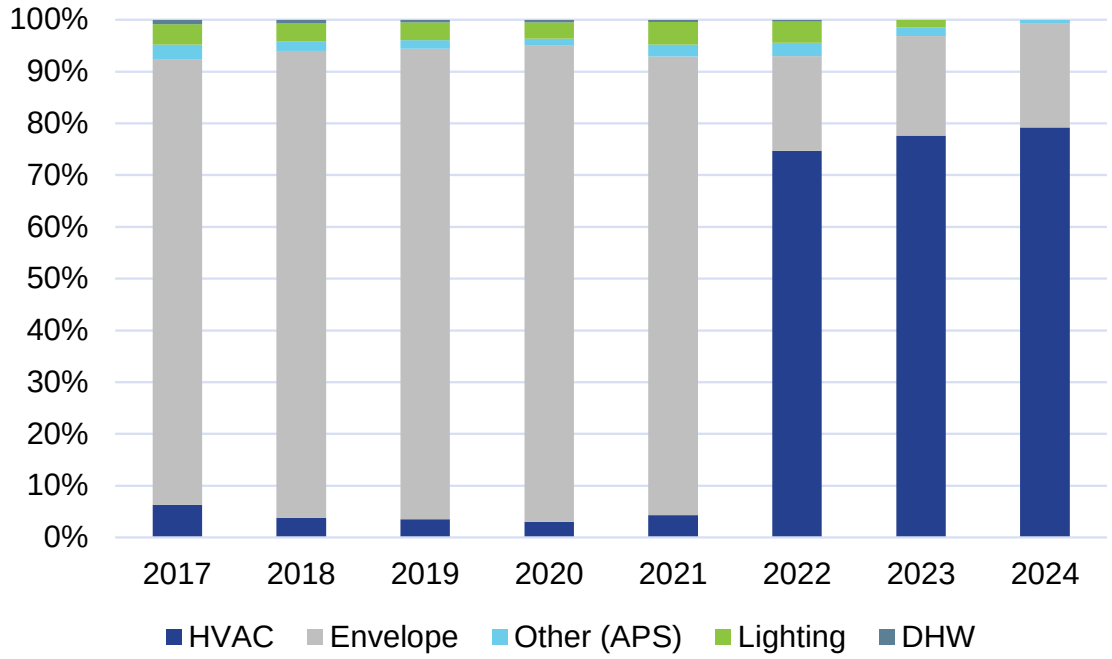


Table 30. Percentage of Net Energy Savings by Measure Category and Year (kWh)
HES Program

Measure	Percentage of net energy savings by measure and year (kWh)							
	2017	2018	2019	2020	2021	2022	2023	2024
HVAC	6.3%	3.8%	3.5%	3.0%	4.3%	74.7%	77.3%	79.0%
Envelope	86.1%	90.2%	90.9%	92.1%	88.6%	18.3%	19.2%	20.1%
Other (APS)	2.8%	1.8%	1.7%	1.4%	2.3%	2.6%	1.6%	0.6%
Lighting	4.0%	3.5%	3.4%	3.1%	4.4%	4.1%	1.5%	<0.1%
DHW	0.8%	0.7%	0.5%	0.5%	0.4%	0.3%	<0.1%	<0.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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3.2.3.2 Energy Solutions for Multifamily Homes (Multifamily Homes)

The Multifamily Homes program has been dominated by *HVAC* and *envelope* savings for the past five years. In 2017, *HVAC* was responsible for 71 percent of the savings, and *envelope* measures 28 percent of savings. This trend shifted in the years after, where in 2021, 80 percent of program savings came from *envelope* measures and 16 percent from *HVAC*. In 2024, much like in 2022 and 2023, this trend reverted, with HVAC measures accounting for 77 percent of Multifamily Homes savings and only 22 percent coming from *envelope* savings. Figure 16 and Table 31 provide details on the distribution of savings among Multifamily Homes measures between 2017 and 2024.

Figure 16. Distribution of Net Energy Savings by Measure and Year (2017−2024)
Multifamily Homes Program

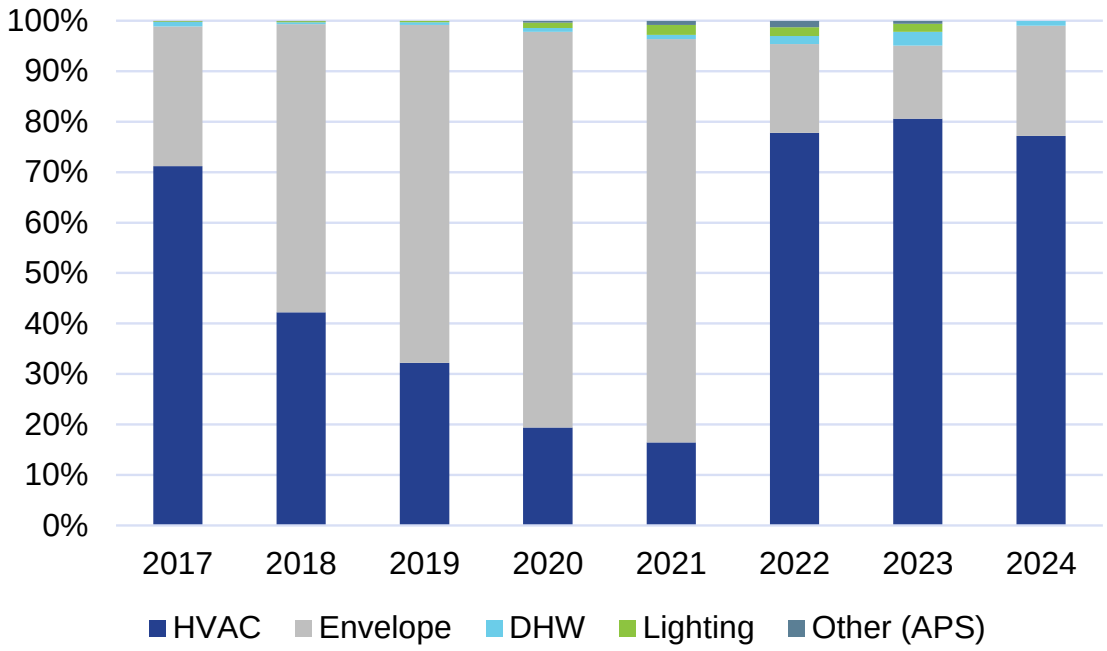


Table 31. Percentage of Net Energy Savings by Measure Category and Year (kWh)
Multifamily Homes Program

Measure	Percentage of net energy savings by measure and year (kWh)							
	2017	2018	2019	2020	2021	2022	2023	2024
HVAC	71.1%	42.2%	32.2%	19.4%	16.4%	77.8%	80.6%	76.9%
Envelope	27.7%	57.1%	67.0%	78.4%	80.0%	17.6%	14.5%	21.7%
DHW	0.9%	0.4%	0.5%	0.8%	0.8%	1.6%	2.7%	1.0%
Lighting	0.1%	0.2%	0.3%	1.0%	2.0%	1.7%	1.6%	0.0%
Other (APS)	0.1%	0.1%	<0.1%	0.4%	0.8%	1.3%	0.6%	<0.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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3.2.3.3 Energy Solutions for Manufactured Homes (Manufactured Homes)

The Manufactured Homes program was dominated by *envelope* savings between 2017 and 2021, with at least 74 percent of net savings coming from *envelope* measures each of the five years. In 2024, only 6 percent of savings from manufactured homes projects came from *envelope* measures, while 93 percent came from *HVAC* projects. Figure 17 and Table 32 provide details on the distribution of savings among Manufactured Homes measures between 2017 and 2024.

Figure 17. Distribution of Net Energy Savings by Measure and Year (2017−2024)
Manufactured Homes Program

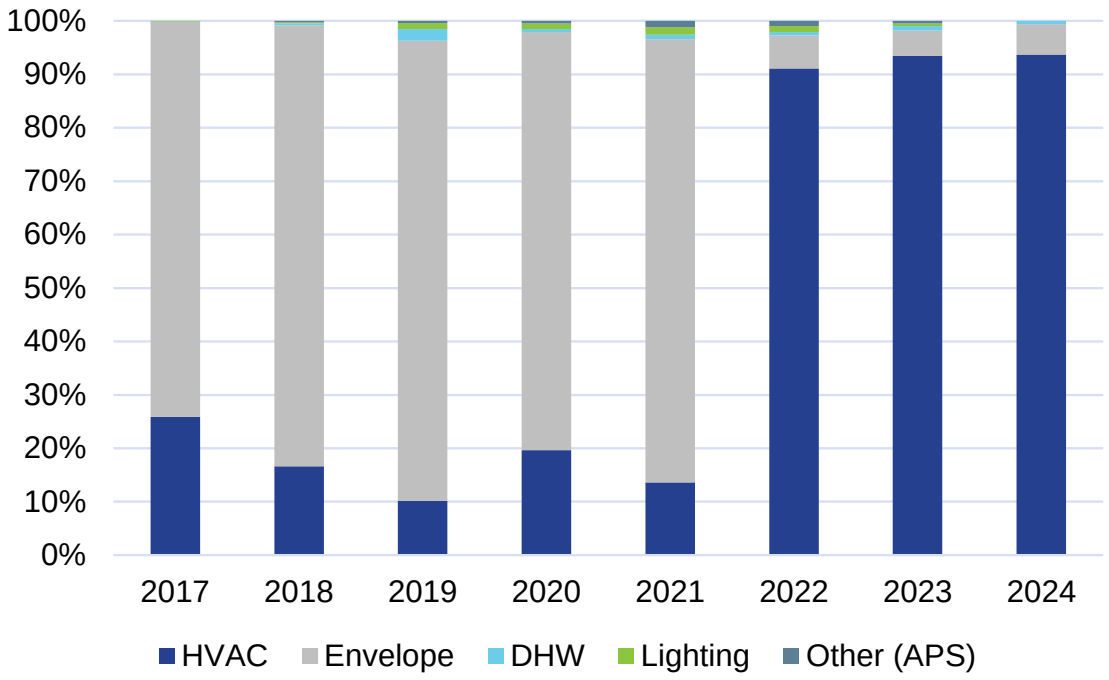


Table 32. Percentage of Net Energy Savings by Measure Category and Year (kWh)
Manufactured Homes Program

Measure	Percentage of net energy savings by measure and year (kWh)							
	2017	2018	2019	2020	2021	2022	2023	2024
HVAC	25.9%	16.6%	10.2%	19.7%	13.6%	91.1%	93.5%	93.4%
Envelope	73.9%	82.6%	86.1%	78.3%	83.1%	6.2%	4.7%	5.7%
DHW	0.1%	0.3%	2.2%	0.6%	0.8%	0.6%	0.8%	0.6%
Lighting	0.1%	0.2%	1.1%	1.0%	1.4%	1.1%	0.5%	0.0%
Other (APS)	<0.1%	0.3%	0.4%	0.5%	1.2%	1.0%	0.5%	<0.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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3.2.3.4 Point of Purchase Solutions (POPS)

The POPS program has had most of its savings come from *lighting* over the past seven years, with between 70 and 97 percent of POPS savings. Starting in 2023, *Other (APS)* measures were the next largest contributor, with about 28 percent of net program savings in 2023 and 42 percent in 2024. Figure 18 and Table 33 provide details on the distribution of savings among POPS measures between 2017 and 2024.

Figure 18. Distribution of Net Energy Savings by Measure and Year (2017−2024)
Residential Lighting Appliances (RLA)/POPS Programs

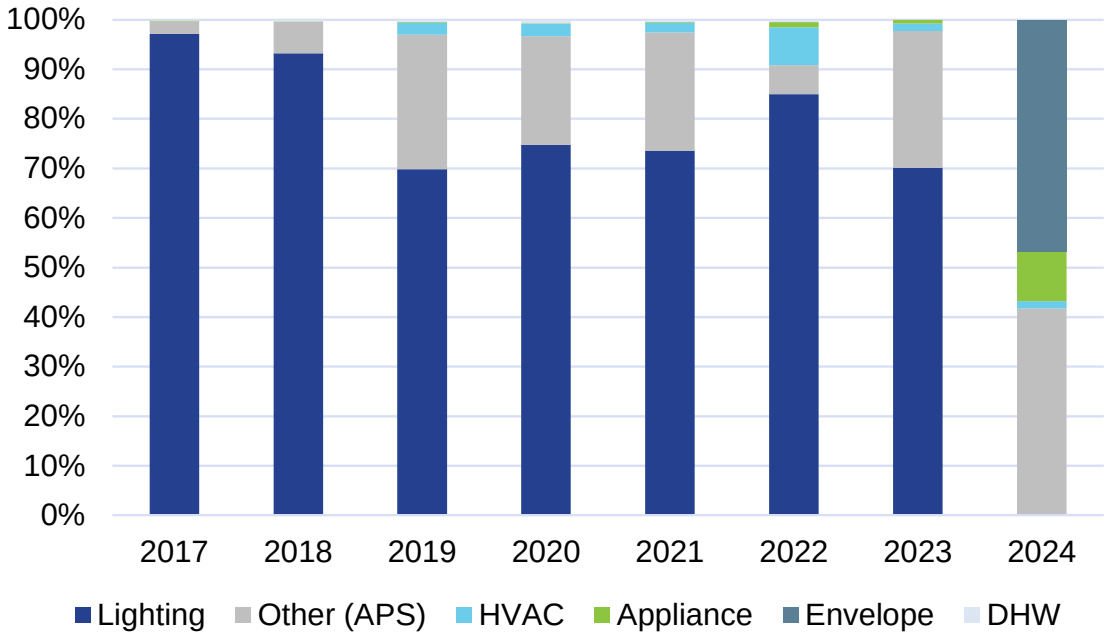


Table 33. Percentage of Net Energy Savings by Measure Category and Year (kWh)
RLA/POPS Programs

Measure	Percentage of Net Energy Savings by Measure and Year (kWh)							
	2017	2018	2019	2020	2021	2022	2023	2024
Lighting	97.1%	93.2%	69.9%	74.8%	73.6%	84.9%	70.0%	<0.1%
Other (APS)	2.6%	6.4%	27.2%	21.9%	23.8%	5.8%	27.5%	41.6%
HVAC	0.0%	0.0%	2.4%	2.5%	2.0%	7.7%	1.5%	1.5%
Appliance	0.1%	0.1%	0.1%	0.1%	0.1%	1.0%	0.8%	10.0%
Envelope	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	46.7%
DHW	0.2%	0.3%	0.5%	0.7%	0.5%	0.5%	<0.1%	<0.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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3.2.3.5 Low-Income Solutions (LIS)

The LIS program was primarily driven by *envelope* savings in 2020 and 2021, with 74 and 76 percent of LIS net savings, respectively. In 2024, *envelope* savings only accounted for 19 percent of savings, while *HVAC* contributed 78 percent of LIS savings. Figure 19 and Table 34 provide details on the distribution of savings among Low-Income Solutions measures between 2020 and 2024.

Figure 19. Distribution of Net Energy Savings by Measure and Year (2020−2024)
LIS Program

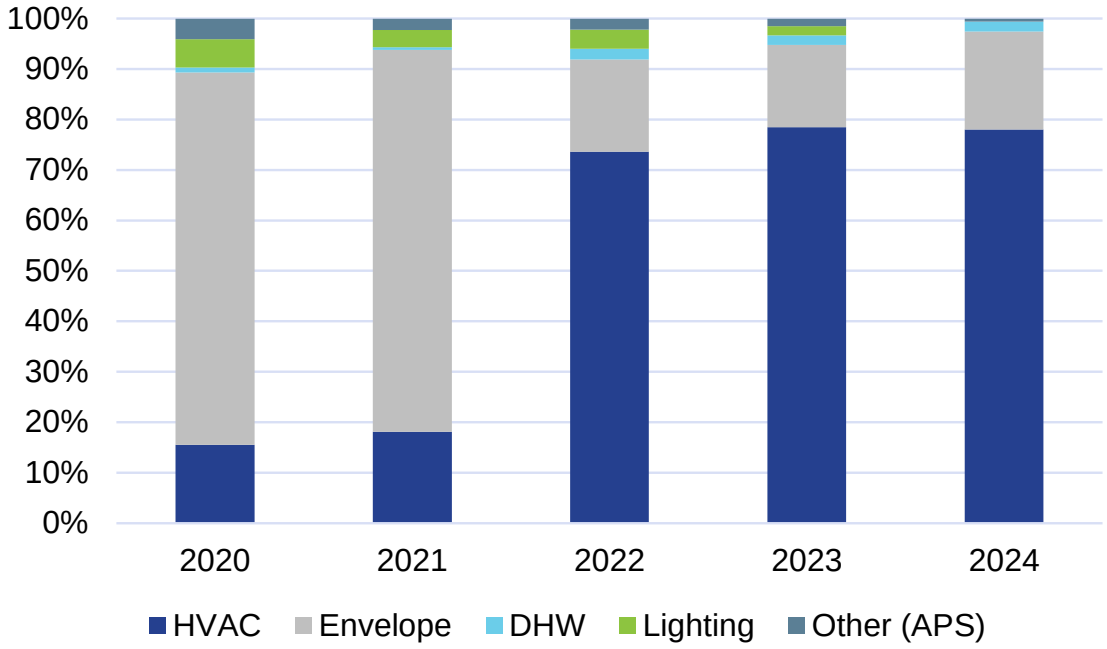


Table 34. Percentage of Net Energy Savings by Measure Category and Year (kWh)
LIS Program

Measure	2020	2021	2022	2023	2024
HVAC	15.5%	18.1%	73.6%	78.5%	78.0%
Envelope	73.8%	75.8%	18.3%	16.3%	19.4%
DHW	1.0%	0.5%	2.1%	1.9%	2.0%
Lighting	5.6%	3.4%	3.8%	1.8%	0.0%
Other (APS)	4.1%	2.3%	2.2%	1.5%	0.6%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

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3.3 COMPREHENSIVENESS CHECKLIST

The EM&V effort includes an annual review of the Arkansas Public Service Commission's (APSC) Comprehensiveness Checklist (Comprehensive Checklist) to assess portfolio performance against the checklist's seven factors. From the EM&V team's assessment, EAL met the APSC's Comprehensiveness Checklist's objectives in PY2024 at the portfolio level, although opportunities for improvement were identified for specific programs.

Comprehensiveness Factor 1
Whether the programs or portfolios provide, directly or through identification and coordination, the education, training, marketing, or outreach needed to address market barriers to adopting cost-effective energy efficiency measures.

The EM&V team assessed this factor through in-depth interviews with EAL's implementation contractors and a marketing and training materials review. The EAL programs continued to provide education and outreach to trade allies and customers that address specific market barriers to adopting cost-effective efficiency measures. Trade ally technical training, upstream and midstream market actor engagement, and customer marketing and outreach remained foundational strategies. The following highlights specific efforts made to achieve this factor:

- **Program branding and all marketing materials continue to carry the *Entergy Solutions* logo.** Marketing collateral is reviewed, updated, and refreshed annually.
- **Mass marketing, coupled with targeted marketing to specific segments, continued to raise awareness among customers.** In particular, the use of social media and emails continued to increase. Email blasts were reported as successful in raising awareness and motivating customers to participate. EAL and its implementation contractors sought out various education and giveaway opportunities through community and corporate events and conducted in-person visits to target markets. Remote outreach efforts included media buys (print and radio were the most common), direct mailings, telephone calls, and previously referenced email blasts.
- **Trade ally education and training continued across all programs and expanded to meet specific measures; in particular, *HVAC tune-ups* increased in PY2024 across residential offerings.** For the commercial programs, a trade ally specialist position continued to focus on recruiting and training trade allies on all programs, measures, incentive levels, marketing, and project savings calculators. Trade ally summits were also held for educational purposes, and high-performing trade allies were recognized with awards to foster continued program participation. The upstream residential and midstream commercial components of the POPS program continued expanding partnerships. In particular, POPS focuses on retailer and distributor outreach and training to help sales associates be subject-matter experts to best influence decision-making during the purchase.

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- **EAL solicited customer feedback to improve customer outreach and education.** Programs provided a toll-free telephone number to customers so they could speak directly with customer service representatives. Also, several programs in EAL's portfolio conducted periodic surveys to receive feedback about satisfaction directly from program participants.
- **Program staff dedicated to marketing and outreach across all EAL territories.** EAL program managers and implementation contractor staff are program experts and provide education and outreach about programs, including other utilities' programs. Also, program staff recruit trade allies, retailers, and distributors that provide additional program reach across EAL's service territory and help them successfully achieve goals. Online purchasing tools expanded this program cycle, allowing customers to identify their rebated items online, verify eligibility, and obtain a scannable code for use at participating retailers, increasing accessibility and ease of participation. These online offerings are a preferred option for a segment, and EAL has continued to build on these efforts.
- **EAL continued substantial efforts to serve traditionally underserved households through specific efforts to reach multifamily, manufactured home, and low-income customers**. This was accomplished through its downstream programs, which successfully served low-income and senior citizen households (as summarized in Section 16 of this report) and through its POPS Program. In addition to downstream program offerings, EAL and its implementation contractor partnered with various organizations that serve low-income customers, such as food banks, to deliver energy-efficient products to these households and increase the participation of retailers in low-income neighborhoods that participate in the POPS program. These multi-pronged offerings to low-income customers help address this sector's substantial affordability barriers.

Comprehensiveness Factor 2
Whether the program or portfolio has adequate budgetary, management, and program delivery resources to plan, design, implement, oversee, and evaluate energy efficiency programs.

The EM&V team assessed this factor through performance data provided by EAL and in-depth interviews with implementation contractors and program staff. Overall, the EM&V team found that budgets and resources were sufficient to support program goals, including the plan, design, implementation, oversight, and evaluation of the programs. With lower avoided costs and increased goals in the program cycle, a myriad of challenges also arose during the pandemic. Inflationary pressures identified as specific program obstacles in the PY2022 EM&V research continued in BY2023, specifically delaying some customers' planned upgrades. To address these challenges, the programs continued to leverage the trade ally infrastructures coupled with expanded channels (upstream, midstream, online) to market the programs and deliver them to customers.

- **In most cases, program budgets were sufficient to implement the programs, but persistent inflation affecting material and staffing costs is a concern.** Program and implementation staff reported that they had enough budget to cover program implementation but also reported concern with continued increasing costs in PY2022 that persisted in BY2023. Pre-negotiated contracts helped maintain many costs, but there are concerns about future program years. EAL achieved its energy savings goals at a portfolio level but fell short of demand reduction targets while spending 84 percent of the planned budget, as some programs fell short of participation goals.

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- **Budget flexibility is important for EAL to make allowable adjustments to deliver annual cost-effective energy efficiency that meets savings goals.** Arkansas utilities have budgetary flexibility, with the ability to reallocate up to 10 percent of initial program budgets to other programs in the portfolio. In PY2024, EAL revised the approved budget within the APSC's guidelines for budget flexibility, moving budgeted dollars from underachieving programs to programs seeing higher energy-saving projects and market acceptance, detailed in Table 35. This budget flexibility was critical for EAL's ability to effectively reallocate resources across its portfolio in PY2024.

Table 35. PY2024 Budgets by Program/Category ($1,000s) (Initial vs. Actual)

Program/category	Initial budget	Revised budget	Actual spend
Home Energy Solutions	$15,266	$15,266	$11,706
Energy Solutions for Multifamily Homes	$2,809	$2,809	$2,283
Energy Solutions for Manufactured Homes	$1,426	$1,426	$1,145
Low-Income Solutions	$5,384	$5,384	$3,691
Point of Purchase Solutions	$8,751	$9,360	$7,888
Large Commercial & Industrial Solutions	$19,010	$18,606	$15,068
Small Business Solutions	$4,173	$4,041	$2,017
Public Institutions Solutions	$2,965	$2,892	$2,270
Agricultural Energy Solutions	$2,122	$2,122	$1,286
Residential Direct Load Control	$2,698	$2,698	$2,373
Smart Direct Load Control Pilot	$5,311	$5,311	$4,625
Agricultural Irrigation Load Control	$3,764	$3,764	$3,670
Regulatory	$0	$0	$211
Total	**$73,680**	**$73,680**	**$58,232**

Comprehensiveness Factor 3
Whether the programs or portfolio reasonably address all major end-uses of electricity or natural gas, as appropriate.

The EM&V team assessed this factor through tracking system data analysis and interviews with EAL program managers and program implementers. This factor was found to be fully met as **program designs include measure offerings and incentives to promote all significant electricity end-uses,** as can be seen in the *Measure Trend Analysis* in Section 3.2 above, which details end-uses across EAL's portfolio**.** In particular, the *Measure Trends Analysis* demonstrates how the overall portfolio has diversified from primarily *lighting* to more comprehensive measures. On the commercial side, *CEI* has become the highest savings measure as EAL and its implementer works with customers to implement comprehensive operations and maintenance improvements across the whole facility. On the residential side, *HVAC* measures have increased as a percentage of savings alongside *envelope* measures. Most downstream programs have tiered incentives to encourage customers to undertake more

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comprehensive energy efficiency projects. The Home Energy Solutions and Low-Income Solutions programs' energy assessment identifies savings and provides education regarding all available significant electricity end-uses, including offerings through the CWA. The POPS program has expanded the number of measures incentivized by working directly with retailers and distributors. While the Small Business Solutions program has a generous incentive for *refrigeration* to encourage this measure, in addition to *lighting,* the program is still dominated by *lighting,* and *opportunities to pursue additional measures* was a process recommendation in BY2023. EAL continues to look for new cost-effective measure offerings to add to its program offerings, such as *ductless mini-splits* and *VFDs* for agricultural use. Large C&I has been consistently delivering a substantial percent of its savings through *custom* offerings tailored to customer needs as EAL and the program implementer work with customers to identify deeper sources of savings, including a range of operation and maintenance practices in addition to capital improvements.

Comprehensiveness Factor 4

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

The EM&V team assessed this factor through tracking system data analysis and interviews with EAL program managers and program implementers. EAL reported both program changes and continued program strategies to address customers' needs, starting with identifying comprehensive savings options upfront to customers through energy assessments. The EM&V team conducted a program participation analysis of how customers receive measures over the program cycle (PY2020−BY2023); the reader is referred to the Technical Appendix to this report for the detailed analysis results. The program cycle participation analysis found that EAL is comprehensively addressing residential and small business customers' needs at one time, largely avoiding lost opportunities. Commercial customers' more complex energy needs require a different approach, according to program staff interviews. It was reported more savings can be achieved once a customer relationship has been established. The program cycle participation analysis demonstrates the importance of a multi-year relationship for commercial customers served through the Public Institutions Solutions program. The Large C&I Solutions Program saw less multi-year participation this program cycle; however, EAL's increased CEI offerings, as discussed above in the *Measure Trends Analysis Section* (Section 3.2), is expected to increase multi-year relationship building for the Large C&I Solutions customer segment in the next program cycle. In summary, the program cycle participation analysis supports the fact that the programs have gained traction in relation to this Comprehensive Factor. The majority of residential and small business customers' needs are addressed at one time, while for commercial customers with more varied energy efficiency needs, EAL has built on past positive program experiences to do additional customer projects, especially for the Public Institutions Solutions customer segment.

- **EAL continues to try to identify and serve customers comprehensively.** EAL staff and implementation contractors reported successfully implementing deeper savings as programs and customer relationships have become more established in the commercial sector. Across the residential programs and *direct-install* measures, more *envelope* and *AC tune-up* measures occur as *duct sealing* has become a significant source of savings identified through energy assessments. Another example of addressing multiple needs is the Large C&I program, where over one-half of the savings in PY2022 are from *custom* projects. The implementation contractor works closely with customers to comprehensively address facility needs.

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- **Program staff seek to educate customers on all energy efficiency needs, completing comprehensive assessments when able.** One of the program staff's objectives is to comprehensively serve customers and foster strong customer relationships to educate customers on energy efficiency better and drive deeper savings. Field staff have developed customer relationships across EAL's territory, including in the harder-to-reach small business, agriculture, multifamily, manufactured homes, and low-income segments, with the objective of more comprehensively meeting their energy efficiency needs.

Comprehensiveness Factor 5

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

The EM&V team assessed Comprehensive Factor 5 through in-depth interviews with EAL staff and implementation contractors, a review of outreach events, and participant characterization. Overall, the EM&V team found several strategic partnerships to reach targeted customer sectors and leverage non-utility program resources.

- **New and innovative partnerships led to increased outreach activities for the agriculture and commercial sectors.** Both the agriculture and commercial sectors have built a successful relationship with implementation staff. Partnerships continued with several agencies and associations, including various trade associations. EAL partnered with the Arkansas Association of Energy Efficiency Engineers to co-fund training and seminars on HVAC, lighting technologies, and energy benchmarking. The AES program has partnered with the United States Department of Agriculture to serve agricultural customers.
- **Non-utility program resources were leveraged for the residential sectors.** Arkansas weatherization and community action agencies were engaged to support the implementation of the LIS program. Working with the community action agencies also aimed to increase the geographic reach of the residential programs. In addition, a number of strategic partnerships were established and led to neighborhood sweeps, such as a partnership with Habitat for Humanity.
- **Programs continue to foster and increase partnerships with manufacturers, distributors, and trade allies.** The POPS program increased participating distributors and retailers, expanded to new types of measures, and expanded partnerships to reach low-income segments.

Table 36 summarizes the customers served by programs during the first year of the current three-year program cycle, demonstrating the effectiveness of efforts to meet various customer sectors' comprehensive needs through downstream, midstream, and upstream programs.

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Table 36. Distribution of Participating Customers by Program and Sector, PY2024

Program	Participating customers	Percentage of sector served	Percentage of portfolio
Residential			
Home Energy Solutions	8,505	4%	4%
Energy Solutions for Multifamily Homes	2,025	1%	1%
Energy Solutions for Manufactured Homes	563	0%	0%
Low-Income Solutions	1,859	1%	1%
Point of Purchase Solutions — Residential Lighting and Appliances	192,937	87%	86%
Residential Direct Load Control	12,944	6%	6%
Smart Direct Load Control Pilot — Residential	1,806	1%	1%
Subtotal: Residential	**220,639**	**100%**	**99%**
Commercial			
Point of Purchase Solutions — Commercial Midstream Lighting	454	28%	0%
Large C&I Solutions	371	23%	0%
Small Business Solutions	470	29%	0%
Public Institutions Solutions	178	11%	0%
Smart Direct Load Control Pilot — Commercial	168	10%	0%
Subtotal: Commercial	**1,641**	**100%**	**1%**
Agricultural			
Point of Purchase Solutions — Agricultural Lighting	1	0%	0%
Agricultural Energy Solutions	17	2%	0%
Agricultural Irrigation Load Control	969	98%	0%
Subtotal: Agricultural	**987**	**100%**	**0%**
Unknown[20]	13	100%	0%
Total[21]	**223,280**	**–**	**100%**

[20] Thirteen participating smart thermostats in the Smart Direct Load Control pilot had an indeterminate sector.

[21] Due to the upstream nature of most program activity for POPS, it is impossible to identify unique participants. Accordingly, this total likely includes EAL customers that participated in multiple programs.

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Comprehensiveness Factor 6

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

The EM&V team assessed this factor through the EAL program manager, implementer interviews, and data analysis. While EAL and implementers reported enough budget allocations to achieve the goal, they also reported the need to realize cost efficiencies to keep programs cost-effective, given the challenges posed by inflation across a variety of materials and equipment. EAL also reported strategies to maximize net benefits, which they effectively achieve based on continual annual improvement of portfolio-level NTG ratios: 90 percent in PY2020, 95 percent in PY2021, and 97 percent in PY2024. Strategies are discussed below.

- **Program delivery aims to maximize NTG ratios.** EAL reports screening commercial customers during the application phase to ascertain whether the program would be instrumental in helping them move forward with energy efficiency instead of incentivizing the energy efficiency projects they were already going to do. The screening is primarily done during pre-inspections. Implementation contractors also report reviewing measure offerings to maximize net savings. Efforts successful in PY2022 continued in BY2023 to target measures to low-income segments through partnerships with organizations such as food banks and Habitat for Humanity and serving this sector through the LIS, Multifamily Homes, and Manufactured Homes programs. The EM&V research found 100 percent NTG for all of these programs. The PY2020 Large C&I NTG research also showed higher NTG values for *custom* projects, which have continued to be a substantial percentage of savings under this program, positively affecting the NTG ratio as Large C&I is the single largest contributor to overall portfolio savings in BY2023.
- **Strategies are used to keep programs cost-effective.** Although *residential lighting* was phased out of EAL's portfolio in BY2023 due to the Energy Independence and Security Act baseline changes, *commercial lighting* continues to be a cost-effective, energy-saving action for many segments. Implementation strategies are used to minimize costs where possible. Two examples are (1) bundling service trips geographically to customers to minimize travel costs and (2) increasing online applications. The residential programs have been successful in substantially increasing *AC* and *heat pump tune-ups* in BY2023 as cost-effective measures.

Comprehensiveness Factor 7

Whether the programs or portfolios have EM&V procedures adequate to support program management and improvement, calculate energy, demand, revenue impacts, and resource planning decisions.

The EM&V team assessed this factor through program staff interviews and independent evaluation monitor (IEM) coordination. The EM&V team's impression is that a collaborative approach with EAL and implementation contractors—while maintaining the evaluation process's objectivity—results in program benefits that lead to healthy realization rates as savings differences are addressed proactively when possible. One example is the 100 percent realization rates for tracking system reviews as the EM&V team provides interim results mid-program-year to EAL and implementation contractors. Another example is ongoing technical reviews and assistance up-front, such as Large C&I Solutions and Public Institution Solutions programs' *custom* projects. At the same time, findings from the field inform savings adjustments. For example, the EM&V team found a 67 percent in-service rate (ISR) for *APSs* in low-income

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households and, therefore, adjusted savings accordingly. This ISR was also applied to give-away events targeting low-income households. Using this ISR from EM&V field work in next year's planning estimates will help EAL and the program implementer better plan to meet evaluated net savings for this measure in the next program cycle. Fieldwork ISR information is also provided to the IEM to inform Technical Reference Manual updates. In addition, the EM&V team:

- **Actively engaged with EAL, implementation contractors, and the IEM throughout the evaluation period.** The EM&V team met biweekly with implementation contractors to discuss program updates and project questions. The EM&V team provided up-front reviews and feedback on savings questions, QA/QC procedures, and information collected on participation forms. The EM&V team also met with EAL biweekly to discuss the progress of EM&V and issues needing resolution. The EM&V team submitted monthly status reports to the IEM and sought guidance as questions arose throughout the evaluation period.
- **Worked with EAL and the IEM for a final PY2024 EM&V Plan,[22] which included submitting sampling plans throughout the program year.** Following EAL's review and approval, the EM&V team sent a draft EM&V Plan to the IEM in August 2024. The IEM then provided comments and feedback throughout the draft plan. The EM&V team fully responded to all IEM comments and documented revisions to the plan according to the IEM comments. The EM&V team also sent commercial sampling memos to the IEM as detailed sampling based on the population of projects that occurred throughout the program year.
- **Shared interim results for review and comment before submitting the final results.** The EM&V team provided draft interim results to each EAL program manager and implementation contractor manager as EM&V was completed to provide time to review and discuss results and recommendations before formal reporting. The EM&V team also submitted a draft of this final report to the IEM for review before finalizing this document.

[22] Entergy Arkansas, LLC Program Year 2024 Evaluation Plan, Tetra Tech, August 2024.

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4.0 HOME ENERGY SOLUTIONS

The objectives of the Home Energy Solutions (HES) Program are to (1) help Entergy Arkansas, LLC (EAL) customers achieve cost-effective electricity savings, (2) educate homeowners and/or renters on the efficiency and inefficiency of their electricity usage, (3) identify opportunities for energy savings in both common areas and individual homes through no-cost energy audits, and (4) install/perform no-cost energy efficient measures/services to homeowners and/or renters. HES is also a delivery mechanism for the *consistent weatherization approach* (CWA) and includes all cost-effective measures following the CWA protocols.

In PY2024, the program incented *ceiling insulation*, *air infiltration* measures, *duct sealing*, *AC/HP tune-ups*, and *smart thermostats* while providing direct installation of *faucet aerators*, *low-flow showerheads*, and *advanced power strips (APS)* measures at no cost.

The evaluation, measurement, and verification (EM&V) team conducted program staff interviews, participant surveys, tracking system reviews, desk reviews, and on-site verifications for a subset of projects to support the evaluation. Table 37 below summarizes the HES evaluation activities.

Table 37. Home Energy Solutions—Data Collection and Evaluation Activities

NTG approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site verification	Metered data analysis[23]
BY2023 EM&V research—participant surveys	Program staff interviews (1) Materials review NEBs estimates	Census	51	11	None

4.1 KEY FINDINGS

In PY2024, HES achieved 29,414 MWh in gross energy savings and 10.0 MW in gross demand savings, as shown in Table 38. HES's gross evaluated savings were slightly lower than reported energy and demand savings. These adjustments resulted in realization rates of 99.5 percent for megawatt-hours and 98.4 percent for megawatts. The EM&V team's adjustments drive these results during the tracking system review, project-level engineering desk reviews, and on-site verifications. The program was highly influential in helping customers install equipment and receive program services, and customers were greatly satisfied with the services they received.

[23] This column refers to EAL customer meter data provided to the EM&V team instead of primary metered data collected as part of the on-site measurement and verification (M&V).

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Table 38. Home Energy Solutions—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio[24]	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	29,414	29,278	99.5%	100%	29,271	11.6%
Demand savings (MW)	10.0	9.9	98.4%	100%	9.9	12.3%

Table 39. Home Energy Solutions—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	27,263	29,271	107.4%
Demand savings (MW)	9.1	9.9	108.6%

4.2 RECOMMENDATIONS

The EM&V team identified six recommendations, shown in Table 40, for EAL's consideration from the evaluation activities.

Table 40. Home Energy Solutions—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Continue to increase the internal quality assurance/quality control (QA/QC) process on the *duct sealing* measures to ensure all cooling and heating efficiency values are captured correctly.	Discrepancies were found for each of the heating types. The *duct sealing—electric cooling* measure resulted in realization rates of 105.5 percent and 97.0 percent for energy and demand savings, respectively. The *duct sealing—heat pump* measure resulted in slight energy savings discrepancies, with realization rates of 97.0 percent and 99.4 percent for energy and demand savings, respectively. Lastly, the *duct sealing—electric resistance* measure resulted in realization rates of 98.1 percent and 90.9 percent for energy and demand savings, respectively. These adjustments were mostly attributed to a difference in efficiency values.
	Recommendation 2: Increase the internal QA/QC process to ensure that all *ceiling insulation* variables are captured correctly.	The EM&V team found one instance where the home had a different heating type compared to the project documentation. The EM&V team also found multiple instances where the total average R-value was not calculated for an attic with multiple spaces, insulation types, and insulation thicknesses. Lastly, the EM&V team also reduced the ceiling area for a couple of the projects due to home size.

[24] Based on the BY2023 process evaluation.

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Type	Recommendation	Key finding
	Recommendation 3: Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program. Given the nature of the measure, it is recommended the Arkansas Technical Reference Manual (TRM) add an in-service rate for Tier 1 *APS* in the next update process.	The EM&V team found instances where the photo of the *APS* showed the *APS* in a non-descriptive installation location and could not verify the *home entertainment system* or *home office*.
	Recommendation 4: Collect documentation that clearly verifies the condenser and blower power and the cooling capacity delivered.	The EM&V team found instances where documentation showing the condenser and blower measurements and the cooling capacity derived from supply and return air temperatures was not provided in the documentation. These parameters are necessary to calculate the post-energy efficiency ratio (EER) (EER_{post}) used in the savings calculations.
	Recommendation 5: Utilize the rated or measured capacity to calculate *AC/HP tune-up* savings.	The EM&V team found that the nominal capacity was used to calculate EER or total energy savings for some *HVAC tune-ups*. However, TRM 9.2 stipulates that the rated or measured capacity should be used to calculate EER or energy savings. The measured or rated cooling capacity can be used as a proxy over the nominal system capacity when the measured or rated heating capacity is not available.
	Recommendation 6: Improve the collection of tune-up variables for efficiency loss (EL) calculation.	The EM&V team identified a lack of clarity in the ArchEE and supplemental data regarding which tune-up projects were *full* M&V tune-ups (involving both pre- and post-testing) and which were *modeled* tune-ups (involving only post-testing). Additionally, the factory or nominal refrigerant charge for HVAC units is not being collected. While data on the condenser and blower is gathered, it is not reported in the ArchEE or supplemental data. These parameters are essential for the evaluation team to accurately calculate the three-year rolling average EL associated with *tune-ups* in the HES program.

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Table 41. Home Energy Solutions—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Continue to increase the internal QA/QC process on the *duct sealing* measure for gas and heat pump heating types to ensure all cooling and heating efficiency values are captured correctly.
	  ○ In progress.
	• Increase the internal QA/QC process to ensure that all *ceiling insulation* variables are captured correctly.
	  ○ In progress.
	• Increase the internal QA/QC process for *smart thermostats* to ensure that all variables are captured correctly.
	  ○ In progress.
	• Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program. Given the nature of the measure, it is recommended the Arkansas Technical Reference Manual (TRM) add an in-service rate for Tier 1 *APS* in the next update process.
	  ○ In progress.

BY2023 process recommendations	• Implementing the QA/QC process should include a comprehensive review of documentation materials provided by the trade allies and compare them with the documentation collected during the QA/QC to verify all key parameters in tracking data.
	  ○ In progress.
	• Ensure that customers receive a hard-copy Home Energy Assessment Report.
	  ○ In progress.
	• Provide customers with guidance on how to implement recommendations.
	  ○ In progress.

4.3 METHODOLOGY

The following sections present an overview of the impact evaluation methodologies.

4.3.1 Impact Evaluation

Established at the project level, the evaluated savings results are based on savings calculations and adjustments made during the tracking system review, 51 engineering desk reviews, and 11 on-site visits. The final evaluated savings account for the tracking system review and desk review level adjustments for all measure categories.

4.3.1.1 Tracking System Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review referenced TRM 9.2 for measure-level savings assumptions; the EM&V team checked the tracking systems' linkage to TRM deemed savings and methods used to estimate savings.

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Our review accomplished three primary objectives: (1) identify initial high-level tracking system concerns, (2) verify whether the savings estimates in the tracking system are consistent with the savings algorithms' results as outlined in TRM 9.2, and (3) assess the tracking system's ability to support QA/QC activities, including future evaluation needs.

4.3.1.2 Desk Reviews

In addition to verifying the use of equations based on the TRM and inputs used to calculate deemed savings, the EM&V team also examined inputs into the tracking system based on a sample of projects. The implementation team provided project files and documentation for sampled projects, and the EM&V team compared parameter values in the project files with those entered into the program's tracking system.

Based on the program's tracking system extract from the tracking system database, PY2024 participant records were assigned measure categories, and the EM&V team created a sample of 40 projects for desk-review-only completes.[25] Participants receiving non-direct-install measures (i.e., *envelope* and *HVAC* projects) were prioritized and selected from the data extract. Table 42 provides details on sampled savings by measure category for the program.

Table 42. Home Energy Solutions—Summary of Desk Review Sampled Savings by Measure Category[26]

Measure category	Reported kWh	Sampled kWh	Percentage kWh sampled	Reported kW	Sampled kW	Percentage kW sampled
Building envelope	5,527,144	43,790	0.8%	3,147.3	21.8	0.7%
Home electronics	224,373	1,091	0.5%	26.6	0.1	0.5%
HVAC	23,603,904	104,577	0.4%	6,866.0	32.9	0.5%
Lighting	970	0	0%	0.2	0	0%
Water heating	57,766	65	0.1%	6.0	0	0.2%
Total	**29,414,158**	**149,523**	**0.5%**	**10,046.1**	**54.8**	**0.6%**

4.3.1.3 On-Site Verification

Eleven projects received on-site verifications to examine whether participating trade allies' measurements were replicable and to verify the installation of incented measures. The EM&V team did not perform testing but made process observations and verified measure installation. Almost all the participants who received on-site verifications had multiple measures installed. Table 43 details the 11 projects that received on-site verification in PY2024.

[25] Based on the distinct count of account numbers sampled for desk review only. Site visits were part of a separate sample.
[26] The data extract was obtained on December 9, 2024.

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Table 43. Home Energy Solutions—Summary of On-Site Verification Sampled Savings by Measure Category

Measure category	Number of sites*	Reported kWh	Reported kW
Building envelope	8	13,373	12.0
HVAC	10	16,973	7.0
Water heating	1	67	0.01
Total*	**11**	**30,413**	**19.0**

*A single site may have multiple measures.

4.4 DETAILED IMPACT EVALUATION RESULTS

This section presents the results of evaluation activities and details findings from the desk reviews and on-site verifications. Based on the EM&V activities, results are reported at the measure and program levels.

4.4.1 Tracking System Review

The results from the HES program tracking system review had nearly identical savings to those calculated by the program implementer. The realization rates were 99.7 percent and 99.6 percent for energy and demand savings, respectively. The savings adjustments were primarily from *tune-ups* using the BY2023 EL factors rather than the PY2024 EL factors. There was also one *air infiltration* project where the pre-cubic-feet-per-minute (CFM) (CFM_{pre}) exceeded the maximum allowable air leakage for the home. Also, while conducting the tracking system review, the EM&V team discovered some *lighting* measures installed in early BY2023 but claimed in PY2024. The EM&V team ultimately decided to allow the few *lighting* measures in the data using the 2023 methodology and NTG. However, the EM&V team explained that additional *lighting* measures could not be claimed moving forward.

Table 44. Home Energy Solutions—PY2024 Tracking System Energy Savings and Realization Rates by Measure Category

Measure	Ex-ante savings		Ex-post savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
Building envelope	5,527,083	3,147.2	5,523,977	3,144.6	99.9%	99.9%
Home electronics	224,373	26.6	224,373	26.6	100.0%	100.0%
HVAC	23,603,904	6,866.0	23,531,144	6,825.0	99.7%	99.4%
Lighting	970	0.1	970	0.1	100.0%	100.0%
Water heating	57,766	6.0	57,766	6.0	100.0%	100.0%
Total	**29,414,097**	**10,046.0**	**29,338,231**	**10,002.4**	**99.7%**	**99.6%**

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4.4.2 Desk Review Results

The EM&V team conducted desk reviews of 51 projects, including projects that received site visits, to compare values recorded on project documentation with those available in the tracking system. The sites that received desk reviews reported 179,936 kWh in energy savings and 73.8 kW in demand savings. The EM&V team found discrepancies leading to adjustments in savings. Desk review findings from projects that did not receive 100 percent realization rates are detailed below.

- **Participant ID: 312001.** This project consists of the installation of *ceiling insulation*, *air infiltration*, and *duct sealing* measures that were completed for a single-family home. The EM&V team adjusted the seasonal energy efficiency ratio (SEER) value from *10* to *11* based on specification sheets found online for the A/C unit model number. This adjustment resulted in an overall project-level realization rate of 97 percent and 99 percent energy and demand savings, respectively.
- **Participant ID: 312005.** This project includes the installation of *ceiling insulation*, *air infiltration*, and *duct sealing* measures for a single-family home. During the desk review, the EM&V team adjusted the SEER value from *14 to 14.5* based on specification sheets found online for the A/C unit model number. This adjustment resulted in an overall project-level realization rate of 98 percent and 98 percent for energy and demand savings, respectively. After a review with the implementor, the SEER was found to be 15.2. The EM&V team agreed to adjust savings accordingly, resulting in realization rates of 94.3 percent and 95.6 percent for energy and demand, respectively.
- **Participant ID: 312018.** This project consists of *duct sealing* for a single-family home. During the desk review, the EM&V team adjusted the SEER value from *14* to *14.5* based on the specifications sheets found online. This adjustment resulted in an overall project-level realization rate of 97 percent and 97 percent energy and demand savings, respectively. After a review with the implementor, the SEER was found to be 14. The EM&V team agreed to adjust savings accordingly, resulting in realization rates of 100.0 percent for both energy and demand.
- **Participant ID: 312019.** This project consists of *duct sealing* for a single-family home. During the desk review, the EM&V team adjusted the SEER value from *10* to *10.7* based on the provided specification sheets. This adjustment resulted in an overall project-level realization rate of 93 percent and 93 percent energy and demand savings, respectively.
- **Participant ID: 312021.** This project consists of *duct sealing*, *air sealing*, and *ceiling insulation* for a single-family home. During the desk review, the EM&V team adjusted the SEER value from *15* to *14.3* based on specification sheets found online. This adjustment resulted in an overall project-level realization rate of 101 percent and 101 percent energy and demand savings, respectively. After a review with the implementor, the SEER was found to be 15. The EM&V team agreed to adjust savings accordingly, resulting in realization rates of 100.0 percent for both energy and demand.
- **Participant ID: 312023.** This project consists of the installation of *ceiling insulation* and *duct sealing* measures for a single-family home. During the desk review, the EM&V team adjusted the SEER value from *10* to *13* based on the specification sheets found online. This adjustment resulted in an overall project-level realization rate of 88 percent and 92 percent energy and demand savings, respectively.

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- **Participant ID: 312003.** This project consists of the installation of *air infiltration*, *duct sealing*, and *smart power strip* measures for a single-family home. The EM&V team adjusted the SEER value from *13* to *12* based on specification sheets found online for the A/C unit model number. Also, the *smart power strip* location could not be determined, so the *average APS* savings were used. These adjustments resulted in an overall project-level realization rate of 101 percent and 105 percent energy and demand savings, respectively.
- **Participant ID: 312029.** This project consists of *duct sealing* for a single-family home. During the desk review, the EM&V team adjusted the SEER value from *10* to *10.7* based on the provided specifications. Also, the cooling capacity was adjusted from *3 tons* to *2.5 tons*, which resulted in a CFM_{pre} adjustment from *480 CFM* to *400 CFM*. These adjustments resulted in an overall project-level realization rate of 73 percent for both energy and demand savings.
- **Participant ID: 412008.** This project consists of the installation of *ceiling insulation*, *air sealing*, and *duct sealing* measures for a single-family home. During the desk review, the EM&V team adjusted the floor area from *1,504 square feet* to *1,296 square feet*. The EM&V team also adjusted the SEER value from *14* to *13* based on the specification sheets. These adjustments resulted in an overall project-level realization rate of 95 percent and 92 percent energy and demand savings, respectively.
- **Participant ID: 412012.** This project consists of the installation of *ceiling insulation*, *air sealing*, and *duct sealing* measures for a single-family home. During the desk review and on-site visit, the EM&V team combined the two *ceiling insulation* measures into one measure and calculated the average R-value, which resulted in an R-value of 8. Also, the SEER value was adjusted from *15* to *14.3* based on specification sheets found online. These adjustments resulted in an overall project-level realization rate of 110 percent and 111 percent energy and demand savings, respectively.
- **Participant ID: 312016.** This project consists of the installation of *duct sealing*, *low-flow faucet aerators*, and *air sealing* measures for a single-family home. During the desk review, the EM&V team adjusted the SEER and heating seasonal performance factors (HSPF) values from *14* to *14.3* and *8.2* to *7.5*, respectively, based on Air Conditioning, Heating and Refrigeration Institute (AHRI) documentation found online. Also, the flow rate for the *low-flow faucet aerator* was adjusted from *1.5* to *1* based on the photos. These adjustments resulted in an overall project-level realization rate of 106 percent and 99 percent for energy and demand savings, respectively. After a review with the implementor, the SEER was found to be 15, and the HSPF was found to be 8.2. The EM&V team agreed to adjust savings accordingly, resulting in realization rates of 99.0 percent and 95.1 percent for energy and demand, respectively.
- **Participant ID: 312025.** This project consists of *duct sealing* for a single-family home. During the desk review, the EM&V team adjusted the HSPF value from *8.2* to *9* based on the AHRI certificate found online. This adjustment resulted in an overall project-level realization rate of 94 percent and 100 percent energy and demand savings, respectively.
- **Participant ID: 412019.** This project consists of *air sealing* and *duct sealing* measures for a single-family home. During the desk review and on-site visit, the EM&V adjusted the HSPF value from *8.2* to *9* based on specification sheets found online. This adjustment resulted in an overall project-level realization rate of 95 percent and 100 percent energy and demand savings, respectively.

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- **Participant ID: 312004.** This project consists of the installation of *ceiling insulation*, *air infiltration*, and *duct sealing* measures for a single-family home. During the desk review, the EM&V team adjusted the HSPF from *7.7* to *8.5* based on specification sheets found online for the heat pump model number. Also, the *smart power strip* location could not be determined, so the *average APS* savings were used. These adjustments resulted in an overall project-level realization rate of 96 percent and 100 percent energy and demand savings, respectively.
- **Participant ID: 312008.** This project consists of the installation of a *smart power strip*, *air infiltration*, and *duct sealing* measures for a single-family home. During the desk review, the EM&V team could not determine the *smart power strip* location, so the *average APS* savings were used. This adjustment resulted in an overall project-level realization rate of 91 percent and 97 percent energy and demand savings, respectively.
- **Participant ID: 412002.** This project consists of *air sealing*, *duct sealing*, and a *smart power strip* for a single-family home. During the desk review, the EM&V team was unable to determine the *power strip* location, so the *average APS* savings values were used. This adjustment resulted in an overall project-level realization rate of 110 percent and 102 percent for energy and demand savings, respectively.
- **Participant ID: 312007.** This project consists of a *heat pump tune-up* and the installation of *ceiling insulation* in a single-family home. The EM&V team adjusted the heating capacity to match the measured cooling capacity from the *heat pump tune-up* test results. This adjustment resulted in an overall project-level realization rate of 85 percent and 100 percent energy and demand savings, respectively.
- **Participant ID: 312030.** This project consists of an *A/C tune-up* for a single-family home. The EM&V team found that no documentation was provided showing the cooling capacity delivered or power measurements of the system after the tune-up. Without this documentation, an EER_{post} cannot be calculated, and Arkansas TRM Method 2 cannot be used to calculate energy savings. Because no refrigerant charge adjustment was conducted on this tune-up either, no tune-up savings can be claimed using Arkansas TRM Method 1. This adjustment resulted in an overall project-level realization rate of 0 percent energy savings.
- **Participant ID: 312014.** This project consists of an *A/C tune-up* for a single-family home. During the desk review, the EM&V team adjusted the EER_{post} using the actual cooling capacity rather than the derated cooling capacity based on the tune-up report. This adjustment resulted in an overall project-level realization rate of 86 percent for energy and demand savings.
- **Participant ID: 412004.** This project consists of a *heat pump tune-up* for a single-family home. During the desk review, the EM&V team adjusted the heating capacity to match the calculated cooling capacity from the *tune-up* test results. These adjustments resulted in an overall project-level realization rate of 92 percent and 100 percent energy and demand savings, respectively.

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- **Participant ID: 412003.** This project consists of *air sealing*, *duct sealing*, and a *heat pump tune-up* for a single-family home. During the desk review, the EM&V team adjusted the EER_{post} based on the EER calculations provided. This adjustment also led to an adjustment in the EER_{pre} using the EL calculation based on facility type. Also, the heating capacity was adjusted to match the calculated cooling capacity from the *tune-up* test results. Lastly, the EM&V team found that only one device was plugged into the *smart power strip*. However, there was no savings adjustment for the *smart power strip*. These adjustments resulted in an overall project-level realization rate of 93 percent and 102 percent energy and demand savings, respectively.
- **Participant ID: 412009.** This project consists of the installation of *ceiling insulation* and *A/C tune-up* measures for a single-family home. During the desk review, the EM&V team adjusted the cooling capacity from the derated capacity to the measured capacity based on the *A/C tune-up* test results. Also, the existing R-value was adjusted from *8* to *11* based on the insulation thickness. These adjustments resulted in an overall project-level realization rate of 94 percent and 85 percent energy and demand savings, respectively.
- **Participant ID: 312027.** This project consists of the installation of *ceiling insulation*, *duct sealing*, and *heat pump tune-up* measures for a single-family home. During the desk review, the EM&V team adjusted the R-value from *14* to *5* based on a change in insulation type from *loose-fill fiberglass* to *fiberglass batts*. Also, the savings from the *heat pump tune-up* were removed. These adjustments resulted in an overall project-level realization rate of 113 percent and 126 percent energy and demand savings, respectively.
- **Participant ID: 312009.** This project consists of the installation of *ceiling insulation* for a single-family home. During the desk review, the EM&V team adjusted the floor area from *2,150 square feet* to *1,350 square feet* based on the floor area found on Zillow. This adjustment resulted in an overall project-level realization rate of 63 percent and 63 percent energy and demand savings, respectively. After a review with the implementor, it was determined that an addition was made to the home; however, the square footage was not properly documented. The EM&V team agreed to adjust savings to account for an addition, resulting in realization rates of 83.7 percent for both energy and demand.
- **Participant ID: 312015.** This project consists of the installation of an *A/C tune-up*, *smart thermostat*, and *ceiling insulation* measures for a single-family home. During the desk review, the EM&V team adjusted the floor area from *1,200 square feet* to *1,260 square feet* based on results from Zillow. Also, the heating type for the *ceiling insulation* measure was adjusted from *heat pump* to *electric A/C with gas heat*. These adjustments resulted in an overall project-level realization rate of 60 percent and 100 percent energy and demand savings, respectively.
- **Participant ID: 412001.** This project consists of the installation of *ceiling insulation* and *smart thermostats* for a single-family home. During the desk review, the EM&V team reduced the floor area from *1,200 square feet* to *1,000 square feet* based on county records. This adjustment resulted in an overall project-level realization rate of 90 percent and 100 percent energy and demand savings, respectively.
- **Participant ID: 412010.** This project consists of the installation of a *smart thermostat* and *duct sealing* measures for a single-family home. During the desk review, the EM&V team reduced the floor area to match county records. This adjustment resulted in an overall project-level realization rate of 99 percent and 100 percent energy and demand savings, respectively.

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- **Participant ID: 312013.** This project consists of a *smart thermostat* for a single-family home. During the desk review, the EM&V team adjusted the number of existing thermostats was adjusted from *four* to *two*. These adjustments resulted in an overall project-level realization rate of 107 percent energy savings.
- **Participant ID: 412018.** This project consists of the installation of *ceiling insulation*, *air sealing*, and *duct sealing* measures for a single-family home. During the desk review and on-site visit, the EM&V team found that the heating type of the home was a *heat pump* rather than an *A/C unit with gas heat*. This adjustment resulted in an overall project-level realization rate of 269 percent and 100 percent energy and demand savings, respectively.

Overall, program-level realization based on desk reviews was 101.2 percent and 98.4 percent for energy and demand savings, respectively, due to the adjustments discussed above. See Table 45.

Table 45. Home Energy Solutions—Desk Review Results[27]

Measure	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	Energy realization rate	Demand realization rate
Air conditioner tune-up – Manifoldi measurement	15,421	8.4	15,214	8.3	98.7%	98.6%
Air infiltration	12,808	4.9	14,534	4.9	113.5%	100.0%
Ceiling insulation	44,356	28.8	45,921	28.5	103.5%	99.1%
Duct sealing – AC with resistance heat (tested)	9,465	1.1	9,288	1.0	98.1%	90.9%
Duct sealing – electric cooling (tested)	38,101	20.9	40,268	20.3	105.5%	97.0%
Duct sealing – heat pump (tested)	42,961	7.6	42,008	7.6	97.0%	100.6%
Low flow faucet aerator	132	0.0	175	0.0	132.7%	132.6%
Residential heat pump tune-up	11,786	2.0	10,261	2.0	87.1%	100.6%
APSs (direct install)	1,091	0.1	922	0.1	84.5%	82.8%
Smart thermostats	3,816	-	3,804	-	99.7%	-
Total	**179,936**	**73.8**	**182,396**	**72.8**	**101.2%**	**98.4%**

[27] No savings are represented with a – in the table.

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4.4.3 On-Site Verifications

Eleven projects received on-site verifications to examine whether participating trade allies' measurements were replicable and to verify the installation of incented measures. The EM&V team did not perform testing but made process observations and verified measure installation. On-site projects also received a desk review to compare documentation to data collected on-site. The on-site results and realization rates are included in the overall desk review results.

While on-site, the EM&V team gathered customer feedback on their experience with the program. Overall, customers stated they were satisfied with the program. Some stated they had felt a significant difference in their comfort level. Most customers did not notice a change in their heating/cooling bill.

Overall, program-level realization-based on-site visits were 128.0 percent for energy savings and 101.1 percent for demand savings, as detailed in Table 46. Findings from projects that did not receive 100 percent realization rates are detailed in the *Desk Review Results* Section above (Section 4.4.2).

Table 46. Home Energy Solutions—On-Site Verification Results

Measure category	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	Realization rate	Realization rate
Building Envelope	13,373	12.0	18,936	12.2	141.6%	101.6%
HVAC	16,973	7.0	19,918	7.1	117.4%	100.4%
Water Heating	67	0.0	67	0.0	100.0%	99.9%
Total	**30,413**	**19.0**	**38,922**	**19.3**	**128.0%**	**101.1%**

4.5 OVERALL SAVINGS ESTIMATES

The EM&V team used the desk reviews and on-site verification measurements to calculate the program-level realization rates. Program realization rates indicate that the HES program achieved similar energy and demand savings as reported. Adjustments based on desk reviews or on-site verifications were incorporated into realization rates, ultimately resulting in realization rates of 99.5 percent and 98.4 percent for energy and demand savings, respectively.

Table 47. Home Energy Solutions—Weighted Desk Review and On-Site Verification Results[28]

Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
9 w LED (60 w equivalent) – indoor	970	0.1	970	0.1	100.0%	100.0%	Tracking system review

[28] No savings are represented with a – in the table.

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Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Air conditioner tune-up – Manifoldi measurement	3,595,505	1,899.2	3,547,295	1,873.4	98.7%	98.6%	Desk review, on-site verification, and tracking system review
Air infiltration	1,700,187	536.8	1,929,360	536.8	113.5%	100.0%	Desk review, on-site verification, and tracking system review
Ceiling insulation	3,826,896	2,610.4	3,961,969	2,586.5	103.5%	99.1%	Desk review, on-site verification, and tracking system review
Duct replacement – heat pump	11,363	1.7	11,363	1.7	100.0%	100.0%	Tracking system review
Duct sealing – AC with resistance heat (tested)	2,649,072	245.6	2,599,571	223.3	98.1%	90.9%	Desk review and tracking system review
Duct sealing – electric cooling (tested)	5,059,608	2,765.8	5,339,559	2,682.9	105.5%	97.0%	Desk review, on-site verification, and tracking system review
Duct sealing – heat pump (tested)	8,660,230	1,451.0	8,402,597	1,442.9	97.0%	99.4%	Desk review, on-site verification, and tracking system review
Low-flow faucet aerator	7,983	0.8	10,589	1.1	132.7%	132.6%	Desk review, on-site verification, and tracking system review

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Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Low-flow showerheads	49,784	5.2	49,784	5.2	100.0%	100.0%	Tracking system review
Residential central air conditioner tune-up	65,488	39.3	65,488	39.3	100.0%	100.0%	Tracking system review
Residential heat pump tune-up	3,019,628	463.5	2,629,086	466.1	87.1%	100.6%	Tracking system review
Smart strip (direct install)	224,373	26.6	189,524	22.0	84.5%	82.8%	Desk review and tracking system review
Smart thermostats	543,010	-	541,295	-	99.7%	-	Desk review and tracking system review
Total	**29,414,097**	**10,046.0**	**29,278,449**	**9,881.4**	**99.5%**	**98.4%**	

4.6 QUALITY ASSURANCE/QUALITY CONTROL PROCESSES

The implementation team randomly selects properties to receive post-installation verification as part of the program's QA/QC process, verifying measurements taken by trade allies or performing non-invasive visual inspections of work. When work is deemed insufficient, trade allies must typically revisit the site with the implementation team and perform additional work to bring the site's performance up to program standards. For projects that fail the QA/QC *blower door* or *duct sealing* testing, the trade ally also has the option to accept the QA/QC tested result rather than return to the customer's home. If the trade ally returns to the home, additional documentation of the new work and test results is collected and applied to the project. Once the QA/QC process is complete, the project is processed.

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5.0 ENERGY SOLUTIONS FOR MULTIFAMILY HOMES

The Energy Solutions for Multifamily Homes (Multifamily Homes) program aims to provide cost-effective energy efficiency measures to residents of multifamily buildings with at least five units throughout Entergy Arkansas, LLC's (EAL) service territory. Participating customers receive no-cost audits, direct installation of energy-efficient measures (e.g., *lighting*, low-*flow showerheads*, *faucet aerators*, and *advanced power strips (APS))*, and incentives for more in-depth services designed to improve efficiency. In PY2024, the program incented *tune-ups of air conditioners* and *heat pump systems* and the installation of *air infiltration* and *duct sealing*. *Faucet aerators*, *low-flow showerheads,* and *APS* measures were directly installed at no cost.

In support of the impact evaluation, the evaluation, measurement, and verification (EM&V) team conducted a tracking system review, desk reviews on a randomly selected sample of 31 projects, and on-site measurement and verification (M&V) of six projects. Table 48 details the evaluation activities completed for the program in PY2024.

Table 48. Energy Solutions for Multifamily Homes—Data Collection and Evaluation Activities

NTG approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site verification	Metered data analysis[29]
PY2021 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review NEBs estimates	Census	31	6	None

5.1 KEY FINDINGS

In PY2024, the Multifamily Homes program achieved 10,188 MWh in gross energy savings and 1.4 MW in gross demand savings, as shown in Table 49. The Multifamily Homes program's gross savings were slightly lower than reported energy savings and demand savings, resulting in realization rates of 98.5 percent and 99.6 percent (megawatt-hours (MWh) and megawatts (MW), respectively). The major contributor to the realization rate adjustments was due to efficiency adjustments for *duct sealing* measures, particularly with *gas* and *electric resistance* heating types. There were also several instances where the *tune-up* measures used *nominal* rather than *measured* capacity. The EM&V team's adjustments drive these results during the tracking system review, project-level engineering desk reviews, and on-site verifications.

[29] This column refers to EAL customer meter data provided to the EM&V team as opposed to primary metered data collected as part of the on-site M&V.

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Table 49. Energy Solutions for Multifamily Homes—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio[30]	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	10,188	10,030	98.5%	100.0%	10,030	4.0%
Demand savings (MW)	1.4	1.4	99.6%	100.0%	1.4	1.7%

Table 50. Energy Solutions for Multifamily Homes—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	9,604	10,030	104.4%
Demand savings (MW)	1.5	1.4	90.6%

5.2 RECOMMENDATIONS

The EM&V team identified five recommendations, shown in Table 51, for EAL's consideration from the evaluation activities.

Table 51. Energy Solutions for Multifamily Homes—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Increase the internal quality assurance/quality control (QA/QC) process on the *duct sealing* measure for *AC with resistance heat* and *heat pump* heating types to ensure all cooling and heating variables are captured correctly.	The *duct sealing—AC with resistance heat* measure evaluation resulted in realization rates of 99.9 percent and 99.3 percent for energy and demand savings, respectively, and the *duct sealing—heat pump* measure evaluation resulted in realization rates of 99.9 percent and 100.0 percent for energy and demand savings, respectively, largely due to discrepancies in reported capacity and/or efficiency. The *duct sealing—electric cooling (tested)* and *duct sealing—electric cooling (tested) MFC* measures evaluation resulted in realization rates of 100.0 percent for both energy and demand savings.
	Recommendation 2: Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program. Given the nature of the measure, it is recommended the Arkansas Technical Reference Manual (TRM) add an in-service rate for the Tier 1 *APS* in the next update process.	The EM&V team found instances where the photo of the *APS* showed the *APS* in a non-descriptive installation location. The measure intends to have at least three devices connected as part of an *entertainment system* or *home office* to achieve the deemed savings.

[30] Based on the PY2021 process evaluation.

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Type	Recommendation	Key finding
	Recommendation 3: Utilize the *rated* or *measured capacity* to calculate *AC/HP tune-up* savings.	The EM&V team found that the *nominal* capacity was used to calculate the energy efficiency ratio (EER) or total energy savings for some *HVAC tune-ups*. However, TRM 9.2 stipulates that the *rated* or *measured* capacity should be used to calculate EER or energy savings. The *measured* or *rated* cooling capacity can be used as a proxy over the nominal system capacity when the measured or rated heating capacity is not available.
	Recommendation 4: Heating type documentation should be collected for all projects where savings are dependent on heating type.	The EM&V team found that although the *cooling type* is documented through nameplate photos, the *heating type* is not documented in the same manner. Heating savings for several measures are based on the *fuel type* and the *system type* of a *central heating system* and should be documented and verifiable.
	Recommendation 5: Improve the collection of *tune-up* variables for efficiency loss (EL) calculation.	The EM&V team identified a lack of clarity in the ArchEE and supplemental data regarding which *tune-up* projects were full *M&V tune-ups* (involving both pre- and post-testing) and which were *modeled tune-ups* (involving only post-testing). Additionally, the *factory* or *nominal refrigerant charge* for HVAC units is not being collected. While data on the condenser and blower is gathered, it is not reported in ArchEE or supplemental data. These parameters are essential for the evaluation team to accurately calculate the three-year rolling average EL associated with *tune-ups* in the Multifamily Homes program.

Table 52. Energy Solutions for Multifamily Homes—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Increase the internal QA/QC process on the *duct sealing* measure for all heating types to ensure all cooling and heating variables are captured correctly.
	  ○ In progress.
	• Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program.
	  ○ In progress.
	• Utilize the *rated* or *measured capacity* to calculate *AC/HP tune-up* savings.
	  ○ In progress.
	• Heating type documentation should be collected for all projects where savings are dependent on the heating type.
	  ○ In progress.

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Status of prior year recommendations	

BY2023 process recommendations	• Continue to email and mail customers directly with information about the Multifamily Homes program.
	  ○ In progress.
	• Ensure contractors are appropriately trained and correct any problems that occur during program services.
	  ○ Complete.
	• Provide a written audit report to ensure that customers understand the audit's recommendations, information on other programs, and contact information.
	  ○ Continuing.

5.3 METHODOLOGY

The following sections present an overview of the impact evaluation methodologies.

5.3.1 Impact Evaluation

Established at the project level, the evaluated savings results are based on savings calculations and adjustments made during the tracking system review, 31 engineering desk reviews, and six on-site visits. Final evaluated savings account for the tracking system review and desk-review-level adjustments for all measure categories.

5.3.1.1 Tracking System Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review began using Arkansas TRM 9.2 as a reference in our review of measure-level savings assumptions. The EM&V team reviewed the tracking systems linkage to TRM deemed savings and methods used to estimate savings.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system were consistent with the savings algorithms' results outlined in TRM 9.2. Third, it assessed the tracking system's ability to support QA/QC, including future evaluation needs.

The ArchEE tracking system, which supplied all participants and claimed savings and many inputs needed to verify savings calculations, was used to check for systemic errors across a participant census.

5.3.1.2 Desk Reviews

In addition to verifying the use of equations based on the TRM and inputs used to calculate deemed savings, the EM&V team also examined inputs into the tracking system based on a sample of projects. The implementation team provided project files and documentation for sampled projects, and the EM&V team compared parameter values in the project files with those entered into the program's tracking system.

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Based on the program's tracking system extract from the tracking system database, PY2024 participant records were assigned measure categories, and the EM&V team created a sample of 25[31] projects for desk reviews. Participants receiving *non-direct-install* measures (i.e., *envelope* and *HVAC* projects) were prioritized and selected from the data extract. Table 53 provides details on sampled savings by measure category for the program.

Table 53. Energy Solutions for Multifamily Homes—Summary of Sampled Savings by Measure Category[32]

Measure category	Reported kWh	Sampled kWh	Percentage kWh sampled	Reported kW	Sampled kW	Percentage kW sampled
Building envelope	2,209,961	26,985	1.2%	290.2	2.8	1.0%
Envelope	477	0	0.0%	0.4	0.0	0.0%
Home electronics	44,878	757	1.7%	5.3	0.1	1.9%
HVAC	7,829,537	94,073	1.2%	1,058.9	11.2	1.1%
Water heating	102,859	1,195	1.2%	10.7	0.1	0.9%
Total	**10,187,712**	**123,010**	**1.2%**	**1,365.6**	**14.2**	**1.0%**

5.3.1.3 On-Site Verification

Six projects received on-site verifications to examine whether participating trade allies' measurements were replicable and to verify the installation of incented measures. The EM&V team did not perform testing but made process observations and verified measure installation. Almost all the participants who received on-site verifications had multiple measures installed. Table 54 details the six projects that received on-site verification in PY2024.

Table 54. Energy Solutions for Multifamily Homes—Summary of Sampled Savings by Measure Category

Measure category	Number of sites	Reported kWh	Reported kW
Building envelope	5	3,044	0.3
HVAC	6	26,447	2.7
Total*	**6**	**29,492**	**3.0**

*A single site may have multiple measures.

5.4 DETAILED IMPACT EVALUATION RESULTS

This section presents the results of evaluation activities and details findings from the desk reviews and on-site verifications. Based on the EM&V activities, results are reported at the measure and program levels.

[31] Based on the distinct count of account numbers sampled for desk review only. Site visits were part of a separate sample.
[32] The data extract was obtained on January 20, 2025.

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5.4.1 Tracking System Review

The Multifamily Homes program evaluated tracking system savings resulted in nearly identical savings (100.2 percent kilowatt and 100.1 percent kilowatt-hour realization rates) to those calculated by the program implementer.

Table 55. Energy Solutions for Multifamily Homes—PY2024 Tracking System Energy Savings and Realization Rates by Measure Category

Measure category	Ex-ante savings		Ex-post savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
Building envelope	2,209,961	290.2	2,209,961	290.2	100.0%	100.0%
Envelope	477	0.4	477	0.4	100.0%	100.0%
Home electronics	44,878	5.3	44,878	5.3	100.0%	100.0%
HVAC	7,829,537	1,058.9	7,836,566	1,061.7	100.1%	100.3%
Water heating	102,859	10.7	102,859	10.7	100.0%	100.0%
Total	**10,187,712**	**1,365.6**	**10,194,740**	**1,368.4**	**100.1%**	**100.2%**

5.4.2 Desk Review Results

The EM&V team conducted desk reviews of 31 projects, including projects that received site visits, to compare values recorded on project documentation with those available in the tracking system. The sites that received desk reviews reported 152,501 kWh in energy savings and 17.2 kW in demand savings. The EM&V team found discrepancies leading to adjustments in savings. Desk review findings from projects that did not receive 100 percent realization rates are detailed below.

- **Participant ID: 314004.** This project consists of *air infiltration* and *duct sealing* measures for an apartment unit. During the desk review, the EM&V team found the heating efficiency to be *8.2 HSPF* rather than the *8 HSPF* reported. The EM&V team adjusted the *HSPF* value, resulting in an overall realization rate of 98 percent and 100.0 percent for energy and demand savings, respectively.
- **Participant ID: 414006.** This project consists of *air infiltration*, *low-flow faucet aerators*, and *duct sealing* for an apartment unit. During the desk review, the EM&V team adjusted the HSPF value from *8* to *7.8* based on specification sheets. This adjustment resulted in an overall project-level realization rate of 102 percent and 100 percent for energy and demand savings, respectively.
- **Participant ID: 414008.** This project consists of *duct sealing* for an apartment unit. During the desk review, the EM&V team was unable to read the condenser nameplate, so the *default* seasonal energy efficiency ratio (SEER) value was used. This adjustment resulted in an overall project-level realization rate of 100 percent and 104 percent for energy and demand savings, respectively. After a review with the implementor, the EM&V team agreed to adjust SEER and savings accordingly, resulting in realization rates of 100.0 percent for both energy and demand.
- **Participant ID: 314011.** This project consists of *duct sealing* for an apartment unit. During the desk review, the EM&V team adjusted the SEER value from *10* to *11.5* because the condenser nameplate was unreadable. This adjustment resulted in an

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overall project-level realization rate of 87 percent for both energy and demand savings. After a review with the implementor, the EM&V team agreed to adjust the SEER to *10* and savings accordingly resulting in realization rates of 100.0 percent for both energy and demand.

- **Participant ID: 414012.** This project consists of *air infiltration* and *duct sealing* measures for an apartment unit. During the desk review and on-site visit, the EM&V team could not read the condenser nameplate, so the *default* SEER value was used. Also, the *duct sealing* measurement failed during the on-site visit, so the on-site visit measurement was used to calculate the *duct sealing* savings. The implementer agreed to accept the QA/QC numbers from the site visits. However, the savings have not yet been updated in the tracking system, so savings adjustments were made by the EM&V team. These adjustments resulted in an overall project-level realization rate of 59 percent and 53 percent for energy and demand savings, respectively. However, the implementer updated the reported tracking data after the EM&V findings, resulting in an adjusted project-level realization rate of 98 percent and 88 percent for energy and demand savings, respectively.
- **Participant ID: 414015.** This project consists of *air infiltration* and *duct sealing* measures for an apartment unit. During the desk review and on-site visit, the EM&V team adjusted the *duct sealing* savings to use the on-site cubic-feet-per-minute (*CFM*) value measured because the test failed. The implementer agreed to accept the QA/QC numbers from the site visits. However, the savings have not yet been updated in the tracking system, so savings adjustments were made by the EM&V team. This adjustment resulted in an overall project-level realization rate of 49 percent for both energy and demand savings. However, the implementer updated the reported tracking data after the EM&V findings, resulting in an adjusted project-level realization rate of 100 percent for both energy and demand savings.
- **Participant ID: 314003.** This project consists of the installation of *low-flow faucet aerators*, *low-flow showerheads*, *air sealing*, and *duct sealing* measures for an apartment unit. During the desk review, the EM&V team adjusted the CFM_{post} value in the calculation based on the photos of the measurement results. This adjustment resulted in an overall project-level realization rate of 98 percent for both energy and demand savings.
- **Participant ID: 314008.** This project consists of the installation of *low-flow showerheads*, *smart power strips*, *air sealing*, and *duct sealing* measures for an apartment unit. During the desk review, the EM&V team was unable to determine the installation location of the installed *smart power strip*, so the *average APS* savings were used. This adjustment resulted in an overall project-level realization rate of 97 percent and 96 percent for energy and demand savings, respectively.
- **Participant ID: 314013.** This project consists of *air infiltration*, *low-flow faucet aerators*, *smart power strips*, and *duct sealing* for an apartment unit. During the desk review, the EM&V team could not determine the installation location of the *smart power strip*, so the *average APS* savings were used. This adjustment resulted in an overall realization rate of 99 percent and 99 percent for energy and demand savings, respectively.

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- **Participant ID: 314014.** This project consists of a *heat pump tune-up* for an apartment unit. During the desk review, the EM&V team adjusted the *cooling capacity* based on the tune-up report. The heating savings portion of the measure was also removed since there was no way to confirm if the unit was a *heat pump.* These adjustments resulted in an overall realization rate of 63 percent and 97 percent for energy and demand savings, respectively.
- **Participant ID: 414010.** This project included *air infiltration*, *duct sealing*, and a *heat pump tune-up* for a multifamily home. This site was sampled for implementation QA/QC and EM&V on-site verification. The EM&V team adjusted the capacity from the reported nominal capacity, *30,000 Btuh,* to match the measured cooling capacity, *24,415 Btuh,* since the rated heating capacity was not available. The measured or rated cooling capacity can be used as a proxy over the nominal system capacity when the measured or rated heating capacity is not available. This adjustment resulted in an overall project-level realization rate of 98.0 percent and 93.2 percent for energy and demand savings, respectively.
- **Participant ID: 414011.** This project included a *heat pump tune-up* at a multifamily home. This site was sampled for implementation QA/QC and EM&V on-site verification. The EM&V team adjusted the heating capacity from the reported nominal capacity, 24*,000 British thermal units per hour (Btuh),* to match the measured cooling capacity, *19,468 Btuh,* since the rated heating capacity was not available. The measured or rated cooling capacity can be used as a proxy over the nominal system capacity when the measured or rated heating capacity is not available. The EER_{post} calculation was corrected to use the measured cooling capacity instead of the nominal capacity and adjusted from *10.63* to *8.63*. The implementer agreed to accept the QA/QC numbers from the site visits. However, the savings have not yet been updated in the tracking system, so savings adjustments were made by the EM&V team. These adjustments resulted in an overall project-level realization rate of 94.0 percent and 123.2 percent for energy and demand savings, respectively.
- **Participant ID: 414007.** This project consists of a *heat pump tune-up* for an apartment unit. During the desk review, the EM&V team adjusted the cooling and heating capacities from *nominal* to the *actual values* measured based on the *tune-up* results. The EER_{post} and EER_{pre} also had to be recalculated using the measured cooling capacity. Lastly, the $HSPF_{pre}$ was recalculated using the *default* assumption that the unit had existed for ten years. These adjustments resulted in an overall project-level realization rate of 93 percent and 125 percent for energy and demand savings, respectively.
- **Participant ID: 414009.** This project consists of a *heat pump tune-up*, *air sealing*, and *duct sealing* for an apartment unit. During the desk review, the EM&V team adjusted the cooling and heating capacities for the *tune-up* from *nominal* to *measured results* based on the *tune-up* report. This adjustment resulted in an overall project-level realization rate of 103 percent and 98 percent for energy and demand savings, respectively.
- **Participant ID: 414003.** This project consists of an *air infiltration*, *low-flow faucet aerators*, and a *smart power strip* for an apartment unit. During the desk review, the EM&V team could only find one faucet aerator photo rather than two. Also, the EM&V team found that only one device was plugged into the *smart power strip*. However, there was no savings adjustment for the *smart power strip*. The adjustment resulted in an overall project-level realization rate of 97 percent and 98 percent for energy and demand savings, respectively.

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- **Participant ID: 314002.** This project consists of *air infiltration* for an apartment unit. During the desk review, the EM&V team adjusted the heating type of the unit from a *heat pump* to *A/C with gas heat* based on the photos provided. This adjustment resulted in an overall project-level realization rate of 23 percent and 100 percent for energy and demand savings, respectively.

Overall, program-level realization based on desk reviews was 98.7 percent and 99.9 percent for energy and demand savings, respectively, due to the adjustments discussed above. See Table 56.

Table 56. Energy Solutions for Multifamily Homes—Desk Review Results

Measure	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	Energy realization rate (kWh)	Demand Realization rate (kW)
Air infiltration	30,029	3.1	29,539	3.0	98.4%	99.7%
Duct sealing – AC with resistance heat (tested)	83,571	7.2	83,482	7.2	99.9%	99.3%
Duct sealing – electric cooling (tested)	1,085	0.7	1,085	0.7	100.0%	100.0%
Duct sealing – heat pump (tested)	22,261	3.4	22,245	3.4	99.9%	100.0%
Low flow faucet aerator	332	0.0	297	0.0	89.5%	89.5%
Low flow showerheads	862	0.1	862	0.1	100.0%	100.0%
Residential heat pump tune-up	13,604	2.7	12,391	2.7	91.1%	102.5%
Smart strip (direct install)	757	0.1	587	0.1	77.6%	75.6%
Total	**152,501**	**17.2**	**150,488**	**17.2**	**98.7%**	**99.9%**

5.4.3 On-Site Verification Results

Six projects received on-site verifications to examine whether participating trade allies' measurements were replicable and to verify the installation of incented measures. On-site projects also received a desk review to compare documentation to data collected on-site. The on-site results and realization rates are included in the overall desk review results.

While on-site, the EM&V team gathered customer feedback on their experience with the program; customers stated they were *not satisfied* with the program. The property manager for five of the units at the same location stated that many of the *HVAC units* had to be replaced or serviced after the contractors completed the work.

Overall, program-level realization rates based on on-site verifications were 99.1 percent and 101.8 percent for energy and demand savings, respectively, as detailed in Table 57. Findings from projects that did not receive 100 percent realization rates are detailed in the Desk Review Results section above (Section 5.4.2).

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Table 57. Energy Solutions for Multifamily Homes—On-Site Verification Results

Measure category	Reported savings (kWh)	Evaluated savings (kWh)	Reported savings (kW)	Evaluated savings (kW)	Energy realization rate	Demand Realization rate
Building envelope	3,044	3,044	0.3	0.3	100.0%	100.0%
HVAC	26,447	26,196	2.7	2.8	99.1%	102.0%
Total	**29,492**	**29,240**	**3.0**	**3.1**	**99.1%**	**101.8%**

5.5 OVERALL SAVINGS ESTIMATES

The EM&V team used the desk reviews and independent verifications to calculate the program-level realization rates. Program realization rates indicate that the Multifamily Homes program achieved similar energy and demand savings. Adjustments based on desk reviews or on-site verifications were incorporated into realization rates, resulting in 98.5 percent for energy savings and 99.6 percent for demand savings.

Table 58. Energy Solutions for Multifamily Homes—Weighted Desk Review and Site Visit Results[33]

Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Air conditioner tune-up—manifoldi measurement	151,832	83.2	142,422	78.1	93.8%	93.8%	Tracking system review
Air infiltration	2,005,787	208.1	1,973,035	207.4	98.4%	99.7%	Desk review, on-site verification, and tracking system review
Ceiling insulation	204,174	82.1	204,174	82.1	100.0%	100.0%	Tracking system review
Ceiling insulation (small commercial - multifamily)	477	0.4	477	0.4	100.0%	100.0%	Tracking system review
Duct sealing—AC with resistance heat (tested)	4,947,045	462.2	4,941,767	459.1	99.9%	99.3%	Desk review, on-site verification, and tracking system review
Duct sealing—electric cooling (tested)	130,738	73.8	130,738	73.8	100.0%	100.0%	Desk review and tracking system review
Duct sealing—electric cooling (tested) MFC	7,134	3.9	7,134	3.9	100.0%	100.0%	Tracking system review
Duct sealing—heat pump (tested)	1,501,935	248.6	1,500,866	248.6	99.9%	100.0%	Desk review and tracking system review
Low flow faucet aerator	18,309	1.9	16,394	1.7	89.5%	89.5%	Desk review and tracking system review

[33] No values are represented with a – in the table.

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Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Low flow showerheads	84,551	8.8	84,515	8.8	100.0%	100.0%	Desk review and tracking system review
Residential heat pump tune-up	1,084,869	187.1	988,152	191.7	91.1%	102.5%	Desk review, on-site verification, and tracking system review
Smart strip (direct install)	44,878	5.3	34,818	4.0	77.6%	75.6%	Desk review and tracking system review
Smart thermostats	5,985	-	5,985	-	100.0%	100.0%	N/A
Total	**10,187,712**	**1,365.6**	**10,030,476**	**1,359.7**	**98.5%**	**99.6%**	

5.6 QUALITY ASSURANCE/QUALITY CONTROL PROCESSES

The implementation team randomly selects properties to receive post-installation verification as part of the program's QA/QC process, verifying measurements taken by trade allies or performing non-invasive visual inspections of work. When work is deemed insufficient, trade allies must typically revisit the site and perform additional work to bring the site's performance up to program standards. For projects that fail the QA/QC *blower door* or *duct sealing testing*, the trade ally also has the option to accept the QA/QC tested result rather than return to the customer's home. If the trade ally returns to the home, additional documentation of the new work and test results is collected and applied to the project. Once the QA/QC process is complete, the project is processed. However, the EM&V team found that two projects that received QA/QC testing failed the *duct blaster test*. The implementer accepted the QA/QC adjustments and made the adjustments within their tracking system.

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6.0 ENERGY SOLUTIONS FOR MANUFACTURED HOMES

The Energy Solutions for Manufactured Homes (Manufactured Homes) program aims to provide cost-effective energy efficiency measures to manufactured home communities throughout Entergy Arkansas, LLC's (EAL) service territory. Participating customers receive no-cost audits, direct installation of energy-efficient measures (e.g., *low-flow showerheads*, *faucet aerators*, and *advanced power strips (APS))*, and incentives for more in-depth services designed to improve efficiency. In PY2024, the program incented *tune-ups* of *air conditioners* and *heat pump systems* and the installation of *air infiltration* and *duct sealing*. *Faucet aerators*, *low-flow showerheads*, and *APS* measures were directly installed at no cost.

In support of the impact evaluation, the evaluation, measurement, and verification (EM&V) team conducted a tracking system review and desk reviews on a randomly selected sample of 20 projects and on-site verifications of five projects. Table 59 details the evaluation activities completed for the program in PY2024.

Table 59. Energy Solutions for Manufactured Homes—Data Collection and Evaluation Activities

NTG approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site verification	Metered data analysis[34]
PY2021 EM&V research—participant surveys and market actor interviews	Program staff interviews (2) Materials review	Census	20	5	None

6.1 KEY FINDINGS

In PY2024, the Manufactured Homes program achieved 4,525 megawatt-hours (MWh) in gross energy savings and 0.6 megawatts (MW) in gross demand savings, as shown in Table 60. The Manufactured Homes program's gross evaluated energy savings were slightly lower than reported, while evaluated demand savings were slightly higher than reported, resulting in realization rates of 96.6 percent and 98.9 percent (megawatt-hour and megawatt, respectively). Realization rates were primarily driven by discrepancies in key parameters in *HVAC* measures and an *APS* not being installed. The EM&V team's adjustments drive these results during the tracking system review, project-level engineering desk reviews, and on-site verifications.

[34] This column refers to EAL customer meter data provided to the EM&V team as opposed to primary metered data collected as part of the on-site measurement and verification (M&V).

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Table 60. Energy Solutions for Manufactured Homes—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio[35]	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	4,684	4,525	96.6%	100.0%	4,525	1.8%
Demand savings (MW)	0.6	0.6	98.9%	100.0%	0.6	0.8%

Table 61. Energy Solutions for Manufactured Homes—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	5,023	4,525	90.1%
Demand savings (MW)	0.8	0.6	80.0%

6.2 RECOMMENDATIONS

The EM&V team identified four recommendations, shown in Table 62, for EAL's consideration from the evaluation activities.

Table 62. Energy Solutions for Manufactured Homes—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Continue internal quality control and quality assurance (QA/QC) processes, as they largely appear to be working well in producing verifiable results and correctly input data.	The EM&V team found that most projects tracked the correct variables consistent with the project documentation. However, there were two projects where the EM&V team found discrepancies in key parameters that could be caught in a comprehensive documentation QA/QC prior to tracking data upload.
	Recommendation 2: Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program. Given the nature of the measure, it is recommended the Arkansas Technical Reference Manual (TRM) add an in-service rate for direct install Tier 1 *APS* in the next update process to account for those uninstalled or installed improperly.	The EM&V team found instances where the *APS* was plugged into the wall, but nothing was plugged into the 'switched' setting resulting in no savings coming from the *APS*.

[35] Based on the PY2021 process evaluation.

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Type	Recommendation	Key finding
	Recommendation 3: Ensure quality assurance/quality control (QA/QC) results and findings are incorporated to update savings calculation and ArchEE.	Through ride-along site visits with the QA/QC team, the EM&V team found that one project did not pass the measurement threshold for *duct blaster tests*. However, this issue was corrected in a final version of ArchEE after receiving the EM&V team's recommendation. Ensuring ArchEE gets updated in a timely manner based on the QA/QC process findings or further actions taken is critical.
	Recommendation 4: Improve the collection of *tune-up* variables for efficiency loss (EL): calculation.	The EM&V team identified a lack of clarity in the ArchEE and supplemental data regarding which *tune-up* projects were *full M&V tune-ups* (involving both pre- and post-testing) and which were *modeled tune-ups* (involving only post-testing). Additionally, the *factory* or *nominal refrigerant charge* for HVAC units is not being collected. While data on the condenser and blower is gathered, it is not reported in ArchEE or supplemental data. These parameters are essential for the evaluation team to accurately calculate the three-year rolling average EL associated with *tune-ups* in the Manufactured Homes program.

Table 63. Energy Solutions for Manufactured Homes—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Continue internal QA/QC processes, as they largely appear to be working well in producing verifiable results and correctly input data.
	  ○ Continuing.
	• Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program.
	  ○ In progress.
	• Heating type documentation should be collected for all projects where savings are dependent on heating type.
	  ○ In progress.

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Status of prior year recommendations	

BY2023 process recommendations	• The implementer QA/QC process should include a comprehensive review of documentation materials provided by the trade allies and compare them with the documentation collected during the QA/QC process to verify all key parameters in the tracking data.
	  ○ Under consideration.
	• Continue to share information directly with customers about the Manufactured Homes program via direct mailing when possible.
	  ○ Continuing.
	• Provide a written audit report and discuss recommendations with customers to ensure that customers understand what is included in the audit.
	  ○ In progress.
	• Enhance communication and provide customers with contact information to reach customer service with program-related issues.
	  ○ In progress.

6.3 METHODOLOGY

The following sections present an overview of the impact evaluation methodologies.

6.3.1 Impact Evaluation

Established at the project level, the evaluated savings results are based on savings calculations and adjustments made during the tracking system review, 20 engineering desk reviews, and five on-site visits. The final evaluated savings account is for the tracking system review and desk-review-level adjustments for all measure categories.

6.3.1.1 Tracking System Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review began using Arkansas TRM 9.2 as a reference in our review of measure-level savings assumptions. The EM&V team reviewed the tracking systems linkage to TRM deemed savings and methods used to estimate savings.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system were consistent with the savings algorithms' results outlined in TRM 9.2. Third, it assessed the tracking system's ability to support QA/QC, including future evaluation needs.

The ArchEE tracking system, which supplied all participant and claimed savings and many of the inputs needed to verify savings calculations, was used to check for systemic errors across a participant census.

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6.3.1.2 Desk Reviews

In addition to verifying the use of equations based on the TRM and inputs used to calculate deemed savings, the EM&V team also examined inputs into the tracking system based on a sample of projects. The implementation team provided project files and documentation for sampled projects, and the EM&V team compared parameter values in the project files with those entered into the program's tracking system.

Based on the program's tracking system extract from the tracking system database, PY2024 participant records were assigned measure categories, and the EM&V team created a sample of 15[36] projects for desk reviews. Participants receiving *non-direct-install* measures (i.e., *envelope* and *HVAC* projects) were prioritized and selected from the data extract. Table 64 below characterizes the PY2024 sample selected for desk reviews.

Table 64. Energy Solutions for Manufactured Homes—Summary of Desk Review Sampled Savings by Measure Category[37]

Measure category	Reported kWh	Sampled kWh	Percentage kWh sampled	Reported kW	Sampled kW	Percentage kW sampled
Building envelope	259,667	16,649	6.4%	31.6	1.7	5.4%
Home electronics	14,953	504	3.4%	1.8	0.1	3.4%
HVAC	4,383,522	159,151	3.6%	611.0	17.9	2.9%
Water heating	25,960	751	2.9%	2.7	0.1	2.9%
Total	**4,684,102**	**177,056**	**3.8%**	**647.1**	**19.8**	**3.1%**

6.3.1.3 On-Site Verifications

Five projects received on-site verifications to examine whether participating trade allies' measurements were replicable and to verify the installation of incented measures. The EM&V team did not perform testing but made process observations and verified measure installation. Almost all the participants who received on-site verifications had multiple measures installed. Table 65 details the five sites that received on-site verification in PY2024.

Table 65. Energy Solutions for Manufactured Homes—Summary of On-Site Verification Sampled Savings by Measure Category

Measure category	Number of sites	Reported kWh	Reported kW
Building envelope	4	2,825	0.3
Home electronics	1	83	0.0
HVAC	5	47,136	6.6
Water heating	1	417	0.0
Total*	**5**	**50,460**	**7.0**

*A single site may have multiple measures.

[36] Based on the distinct count of account numbers sampled for desk review only. Site visits were part of a separate sample.
[37] The data extract was obtained on January 20, 2025.

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6.4 DETAILED IMPACT EVALUATION RESULTS

This section presents the results of evaluation activities and details findings from the desk reviews and on-site verifications. Based on the EM&V activities, results are reported at the measure and program levels.

6.4.1 Tracking System Review

Overall, the Manufactured Homes program evaluated tracking system review resulted in identical savings to those calculated by the program implementer. The realization rates were 100 percent for both energy and demand savings.

Table 66. Energy Solutions for Manufactured Homes—PY2024 Tracking System Energy Savings and Realization Rates by Measure Category

Measure	Ex-ante savings		Ex-post savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
Building envelope	259,667	31.6	259,667	31.6	100.0%	100.0%
Home electronics	14,953	1.8	14,953	1.8	100.0%	100.0%
HVAC	4,383,522	611.0	4,383,522	611.0	100.0%	100.0%
Water heating	25,960	2.7	25,960	2.7	100.0%	100.0%
Total	**4,684,102**	**647.1**	**4,684,102**	**647.1**	**100.0%**	**100.0%**

6.4.2 Desk Review Results

The EM&V team conducted desk reviews of 20 projects, including projects that received site visits, to compare values recorded on project documentation with those available in the tracking system. The sites that received desk reviews reported 227,516 kWh in energy savings and 26.7 kW in demand savings. The EM&V team found discrepancies leading to adjustments in savings. Desk review findings from projects that did not receive 100 percent realization rates are detailed below.

- **Participant 315006.** The project included *air infiltration* and *duct sealing* for an *AC unit with resistance heat*. Based on the documentation, the EM&V team adjusted the duct sealing pre-installation airflow measurement from *800* cubic feet per minute (*CFM)* to *529 CFM*. This adjustment resulted in overall project-level realization rates of 64.7 percent and 65.3 percent for energy and demand savings, respectively.
- **Participant 315010.** The project included an *air conditioner tune-up*. Based on the documentation, the EM&V team adjusted the building type from *single-family* to *manufactured home*. This adjustment resulted in overall project-level realization rates of 116.8 percent for both energy and demand savings.

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- **Participant ID: 415009.** This project included *air sealing, duct sealing*, and one *APS*. This site was sampled for implementation QA/QC and EM&V on-site verification. The EM&V team also adjusted the quantity of installed APS from *1* to *0*. The *APS* was found to have been moved from the *home office* to *home entertainment*, but no appliances were found to be plugged into switched outlets. This adjustment resulted in an overall project-level realization rate of 99.3 percent for energy and demand savings, respectively. After a review with the implementor, the EM&V team agreed to adjust the *APS* quantity and savings accordingly resulting in realization rates of 100.0 percent for both energy and demand.
- **Participant ID: 415010.** This project included *an AC tune-up and duct sealing* of an *AC with electric resistance heat*. This site was sampled for implementation QA/QC and EM&V on-site verification. The implementation QA/QC tested the *duct sealing* using a *duct blaster* test and found substantially higher CFM than the reported CFM. The EM&V team adjusted the CFM_{post} from *237 CFM* to *351 CFM* based on the results found during the site visit. This adjustment resulted in an overall project-level realization rate of 81.9 percent and 89.6 percent for energy and demand savings, respectively. However, the implementer updated the reported tracking data after the EM&V findings, resulting in adjusted project-level realization rates of 100.0 percent for both energy and demand savings.

Overall, program-level realization based on desk reviews was 96.0 percent and 97.8 percent for energy and demand savings, respectively, due to the adjustments discussed above. See Table 67 for complete results.

Table 67. Energy Solutions for Manufactured Homes—Desk Review Results

Measure	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	Energy realization rate	Demand realization rate
Air Conditioner Tune-Up - Manifoldi measurement	5,190	2.9	5,404	3.0	104.1%	104.1%
Air Infiltration	19,475	2.0	19,475	2.0	100.0%	100.0%
Duct Sealing - AC with Resistance Heat (Tested)	188,276	18.2	179,054	17.5	95.1%	96.2%
Duct Sealing - Electric Cooling (Tested)	3,736	1.9	3,736	1.9	100.0%	100.0%
Duct Sealing - Heat Pump (Tested)	9,085	1.6	9,085	1.6	100.0%	100.0%
Low Flow Faucet Aerator	293	0.0	293	0.0	99.8%	99.8%
Low Flow Showerheads	875	0.1	873	0.1	99.9%	99.9%
Smart Strip (Direct Install)	587	0.1	587	0.1	100.0%	100.0%
Total	**227,516**	**26.7**	**218,507**	**26.2**	**96.0%**	**97.8%**

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6.4.3 On-Site Verifications

Five projects received on-site verifications to examine whether participating trade allies' measurements were replicable and to verify the installation of incented measures. The EM&V team did not perform testing but made process observations and verified measure installation. On-site projects also received a desk review to compare documentation to data collected on-site. The on-site results and realization rates are included in the overall desk review results.

Overall, program-level realization-based on-site visits were 99.8 percent and 99.9 percent for energy and demand savings, respectively, as detailed in Table 68. Findings from projects that did not receive 100 percent realization rates are detailed in the Desk Review Results section (Section 6.4.2) above.

Table 68. Energy Solutions for Manufactured Homes—On-Site Verification Results

Measure category	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	Realization rate	Realization rate
Building envelope	2,825	0.3	2,825	0.3	100.0%	100.0%
Home electronics	83	0.0	83	0.0	100.0%	100.0%
HVAC	47,136	6.6	47,136	6.6	100.0%	100.0%
Water heating	417	0.0	416	0.0	99.9%	100.0%
Total	**50,460**	**7.0**	**50,460**	**7.0**	**100.0%**	**100.0%**

6.5 OVERALL SAVINGS ESTIMATES

The EM&V team used the desk reviews and on-site verification measurements to calculate the program-level realization rates. Program realization rates indicate that the Manufactured Homes program achieved similar energy and demand savings as reported. Adjustments based on desk reviews or on-site verifications were incorporated into realization rates, ultimately resulting in realization rates of 96.6 percent and 98.9 percent for energy and demand savings, respectively.

Table 69. Energy Solutions for Manufactured Homes—Weighted Desk Review and On-Site Results[38]

Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Air Conditioner Tune-Up - Manifoldi measurement	228,977	124.9	238,424	130.1	104.1%	104.1%	Desk review, on-site verification, and tracking system review
Air Infiltration	259,667	31.6	259,667	31.6	100.0%	100.0%	Desk review, on-site verification, and tracking system review

[38] A dash indicates that there are no kilowatt savings associated with the respective measure.

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Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Duct Sealing - AC with Resistance Heat (Tested)	3,431,073	319.4	3,263,021	307.1	95.1%	96.2%	Desk review, on-site verification, and tracking system review
Duct Sealing - Electric Cooling (Tested)	111,893	60.4	111,893	60.4	100.0%	100.0%	Desk review and tracking system review
Duct Sealing - Heat Pump (Tested)	524,191	89.1	524,191	89.1	100.0%	100.0%	Desk review and tracking system review
Low Flow Faucet Aerator	4,562	0.5	4,554	0.5	99.8%	99.8%	Desk review, on-site verification, and tracking system review
Low Flow Showerheads	21,398	2.2	21,369	2.2	99.9%	99.9%	Desk review, on-site verification, and tracking system review
Residential Heat Pump Tune-Up	80,987	17.1	80,987	17.1	100.0%	100.0%	Tracking system review
Smart Strip (Direct Install)	14,953	1.8	14,953	1.8	100.0%	100.0%	Desk review, on-site verification, and tracking system review
Smart Thermostats	6,401	-	6,401	-	100.0%	100.0%	Tracking system review
Total	**4,684,102**	**647.1**	**4,525,460**	**639.9**	**96.6%**	**98.9%**	

6.6 QUALITY ASSURANCE/QUALITY CONTROL PROCESSES

The implementation team randomly selects properties to receive post-installation verification as part of the program's QA/QC process, verifying measurements taken by trade allies or performing non-invasive visual inspections of work. When work is deemed insufficient, trade allies must typically revisit the site with the implementation team and perform additional work to bring the site's performance up to program standards. For projects that fail the QA/QC *blower door* or *duct sealing* testing, the trade ally also has the option to accept the QA/QC tested result rather than return to the customer's home. If the trade ally returns to the home, additional documentation of the new work and test results is collected and applied to the project. Once the QA/QC process is complete, the project is processed.

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7.0 LOW-INCOME SOLUTIONS OFFERING

Program year (PY) 2024 (PY2024) was the fifth year the Entergy Arkansas, LLC (EAL) Low-Income Solution Offering (LISO) program was implemented since its launch in 2020. The program helps low-income households become more comfortable, safe, and energy-efficient using directly installed home weatherization, health, and safety upgrades at no cost to the customer. The objectives of the LISO are to (1) help EAL customers reduce energy usage, save money on utility bills, and improve comfort in their homes; (2) educate homeowners on the energy efficiency and inefficiency of their homes; (3) identify opportunities for energy savings specific to customers' homes; and (4) improve health and safety of homes residents, provided at no cost to homeowners. Energy audits and energy-efficient home upgrades are delivered through trained and certified home performance contractors. The LISO is also a delivery mechanism for the *consistent weatherization approach* (CWA) and includes all cost-effective measures following the CWA protocols.

The LISO targets eligible low-income households or EAL customers aged 65 or older, as they are considered a hard-to-reach subsector. The program also helps with home repairs to correct minor problems that may otherwise prevent the building from receiving weatherization upgrades or pose a health or safety risk. As part of the LISO, EAL offers the following measures at no cost to qualifying customers: *home energy assessments* by qualified field technicians and the direct installation of *low-flow showerheads*, *faucet aerators*, *advanced power strips (APS),* and *health and safety* measures. EAL also offers the following *weatherization* measures at no cost to the customer: *air sealing*, *duct sealing*, *ceiling insulation*, *smart thermostats*, and *heat pump and AC tune-ups*.

In PY2024, the program incentivized *ceiling insulation*, *air infiltration*, *duct sealing*, and *advanced thermostats* while providing direct installation of *faucet aerators*, *low-flow showerheads*, and *APS* at no cost to the customer. Notably, BY2023 was the last year *LED bulbs* were installed due to new higher Energy Independence and Security Act (EISA) baseline standards for retailers enforced on July 1, 2023, resulting in no savings associated with this measure per Arkansas Technical Reference Manual (TRM) 9.2 (TRM 9.2). This report section focuses on energy savings measures; the reader is referred to the *Consistent Weather Approach and Act 1102* section (Section 16.0) for information on the *health and safety* measures.

The evaluation, measurement, and verification (EM&V) team conducted program staff interviews, tracking system reviews, desk reviews, and on-site verifications for a subset of projects to support the evaluation. Table 70 below summarizes the LISO evaluation activities.

Table 70. Low-Income Solutions—Data Collection and Evaluation Activities

NTG approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site verification	Metered data analysis[39]
PY2020 EM&V research—	Program staff interviews (2)	Census	30	5	None

[39] This column refers to EAL customer meter data provided to the EM&V team as opposed to primary metered data collected as part of the on-site measurement and verification (M&V).

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NTG approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site verification	Metered data analysis[39]
participant surveys and market actor interviews	Materials review				

7.1 KEY FINDINGS

In PY2024, the LISO achieved 7,954 megawatt-hours (MWh) in gross energy savings and 1.9 megawatts (MW) in gross demand savings, as shown in Table 71. The LISO gross evaluated savings were slightly lower than reported energy savings and demand savings, resulting in realization rates of 96.5 and 97.9 percent for energy savings (megawatt-hours) and demand savings (megawatts), respectively. The variance between the reported and evaluated savings results from the EM&V team adjusting the savings during the project-level engineering desk reviews and on-site verification. Realization rates were primarily driven by discrepancies in key parameters in *HVAC* measures and *air infiltration* as well as several *APSs* not being installed or the installation location being unknown.

Table 71. Low-Income Solutions—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio[40]	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	7,954	7,675	96.5%	100.0%	7,675	3.0%
Demand savings (MW)	1.9	1.8	97.9%	100.0%	1.8	2.3%

Table 72. Low-Income Solutions—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	7,873	7,675	97.5%
Demand savings (MW)	1.9	1.8	97.2%

7.2 RECOMMENDATIONS

The EM&V team identified six recommendations, shown in Table 73, for EAL's consideration from the evaluation activities.

[40] Based on the PY2020 process evaluation.

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Table 73. Low-Income Solutions—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program. Given the nature of the measure, it is recommended that the Arkansas TRM add an in-service rate for directly installing *APS* in the next update process to account for the number of *APS* that are uninstalled or not installed correctly, resulting in no energy savings.	The EM&V team found several cases of LISO desk review documentation not showing what the *APS* was connected to or that nothing was plugged into it. The EM&V team either evaluated savings using the *average APS* rather than the highest savings associated with connecting to a *home entertainment center* as savings were claimed or zeroed out savings when energy was not being saved. The adjustment in savings resulted in realization rates of 53.1 percent and 52.5 percent for energy and demand savings, respectively, for the *APS* measure.
	Recommendation 2: Ensure quality assurance/quality control (QA/QC) results and findings are incorporated to update savings calculation and ArchEE.	Through ride-along site visits with the QA/QC team, the EM&V team found that one project did not pass the measurement threshold for *duct blaster* tests. However, this issue was corrected in a final version of ArchEE after receiving the EM&V team's recommendation. Ensuring ArchEE gets updated in a timely manner based on the findings of the QA/QC process or further actions taken is critical.
	Recommendation 3: Continue internal QA/QC processes to improve documentation and transparency and resolve discrepancies.	The EM&V team found that most projects tracked the correct variables consistent with the project documentation. However, there were a few projects where the EM&V team found a discrepancy in the *cooling efficiency*, *HVAC system type*, and *measurement results* varying in pictures and reported parameters. These issues could be caught in a comprehensive documentation QA/QC prior to tracking data upload.
	Recommendation 4: Utilize the *rated* or *measured capacity* to calculate *HP tune-up* savings.	The EM&V team found that the *nominal* capacity was used for heating capacity rather than the *measured cooling capacity*. TRM 9.2 stipulates that the *rated* or *measured* capacity should be used to calculate energy savings. The *measured* or *rated cooling capacity* can be used as a proxy over the *nominal* system capacity when the *measured* or *rated* heating capacity is not available.

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Type	Recommendation	Key finding
	Recommendation 5: Improve the collection of *tune-up* variables for efficiency loss (EL) calculation.	The EM&V team identified a lack of clarity in ArchEE and supplemental data regarding which *tune-up* projects were *full M&V tune-ups* (involving both pre- and post-testing) and which were *modeled tune-ups* (involving only post-testing). Additionally, the *factory* or *nominal refrigerant charge* for *HVAC units* is not being collected. While data on the condenser and blower is gathered, it is not reported in ArchEE or supplemental data. These parameters are essential for the evaluation team to accurately calculate the three-year rolling average EL associated with *tune-ups* in the LISO.
PY2024 process recommendations	**Recommendation 6:** Ensure all documentation, especially photo documentation, is clear and legible.	There were some instances where the EM&V team could not verify the reported parameters due to blurry or small photo documentation.

Table 74. Low-Income Solutions—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Collect documentation that clearly verifies the installation location of the *APS* or use *average APS* consistently in the program.
	  ○ Continuing.
	• Ensure QA/QC results and findings are incorporated to update savings calculation and ArchEE.
	  ○ Continuing.
	• Continue internal QA/QC processes to improve documentation and transparency and resolve discrepancies.
	  ○ Continuing.
	• Utilize the *rated* or *measured capacity* to calculate *HP tune-up* savings.
	  ○ Under consideration.

BY2023 process recommendations	• Continue focusing on training contractors on the importance of customer communication.
	  ○ Continuing.
	• Continue training contractors on best implementation practices to maximize the savings.
	  ○ Continuing.
	• Continue to share information directly with customers about the LISO via email and direct mailing when possible.
	  ○ Continuing.
	• Provide a written audit report to ensure that customers understand what is included in the audit.
	  ○ In progress.

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Status of prior year recommendations	
	• Work with the EM&V team, IEM, and Parties Working Collaboratively to identify streamlined methods to verify program eligibility; collecting sensitive income information was both a barrier to upfront program eligibility verification and back-end program eligibility verification by the EM&V team. ○ Under consideration.

7.3 METHODOLOGY

The following sections present an overview of the impact evaluation methodologies.

7.3.1 Impact Evaluation

Established at the project level, the evaluated savings results are based on savings calculations and adjustments made during the tracking system review, 30 engineering desk reviews, and five on-site visits. Final evaluated savings account for the tracking system review, desk review level, and on-site data collection adjustments for all measure categories.

7.3.1.1 Tracking System Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review referenced TRM 9.2 for measure-level savings assumptions; the EM&V team checked the tracking systems' linkage to TRM deemed savings and methods used to estimate savings.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system were consistent with the savings algorithms' results outlined in TRM 9.2. Third, it assessed the tracking system's ability to support QA/QC, including future evaluation needs.

7.3.1.2 Desk Reviews

In addition to verifying the use of equations based on the TRM and inputs used to calculate deemed savings, the EM&V team also examined inputs into the tracking system based on a sample of projects. The implementation team provided project files and documentation for sampled projects, and the EM&V team compared parameter values in the project files with those entered into the program's tracking system.

Based on the program's tracking system extract from the tracking system database, PY2024 participant records were assigned measure categories, and the EM&V team created a sample of 25 projects for desk-review-only completes[41]. Participants receiving *non-direct-install* measures (i.e., *envelope* and *HVAC* projects) were prioritized and selected from the data extract. Table 75 provides details on sampled savings by measure category for the program.

[41] Based on the distinct count of *ParticipantID*s sampled for desk review only. Site visits were part of a separate sample.

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Table 75. Low-Income Solutions—Summary of Sampled Savings by Measure Category[42]

Measure category	Reported kWh	Sampled kWh	Percentage kWh sampled	Reported kW	Sampled kW	Percentage kW sampled
Building envelope	1,528,596	18,866	1.2%	616.8	7.3	1.2%
Home electronics	83,803	1,426	1.7%	10.0	0.2	1.7%
HVAC	6,191,367	120,866	2.0%	1,244.6	21.2	1.7%
Water heating	150,180	2,067	1.4%	15.6	0.2	1.4%
Total	**7,953,946**	**143,225**	**1.8%**	**1,887.0**	**29.0**	**1.5%**

7.3.1.3 On-Site Verification

Five projects received on-site verifications to examine whether the measurements and parameters reported by participating trade allies were accurate and to verify the installation of incented measures. The EM&V team did not perform testing but made process and measurement observations and verified measure installation. Table 76 details the five projects that received on-site verification in PY2024.

Table 76. Low-Income Solutions—Summary of Sampled Savings by Measure Category

Measure category	Number of sites*	Reported kWh	Reported kW
Building envelope	3	2,646	1.2
Home electronics	4	1,261	0.2
HVAC	5	18,456	3.1
Total	**5**	**22,364**	**4.4**

*A single site may have multiple measures.

7.4 DETAILED IMPACT EVALUATION RESULTS

This section presents the results of evaluation activities and details findings from the tracking system review, desk reviews, and on-site verifications. Based on the EM&V activities, results are reported at the measure and program levels.

7.4.1 Tracking System Review

The overall LISO evaluated tracking system savings resulted in identical savings (100 percent kilowatt-hour and kilowatt realization rates) as those calculated by the program implementer; no adjustments were made during the tracking system review. Further details and measure-based findings are provided in Table 77.

[42] The data extract was obtained on December 16, 2024.

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Table 77. Low-Income Solutions—Tracking System Review Results by Measure Category

Measure	Ex-ante savings		Ex-post savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
Building envelope	1,528,596	616.8	1,528,596	616.8	100.0%	100.0%
Home electronics	83,803	10.0	83,803	10.0	100.0%	100.0%
HVAC	6,191,367	1,244.6	6,191,367	1,244.6	100.0%	100.0%
Water heating	150,180	15.6	150,180	15.6	100.0%	100.0%
Total	**7,953,946**	**1,886.8**	**7,953,946**	**1,886.8**	**100.0%**	**100.0%**

7.4.2 Desk Review Results

The EM&V team conducted desk reviews of 30 participant homes, including projects that received site visits, to compare values recorded on project documentation with those available in the tracking system. The sites that received desk reviews reported 165,588 kWh in energy savings and 33.4 kW in demand savings.

The EM&V team found documentation and key parameter issues and discrepancies related to the following measures, leading to adjustments in savings.

- **Participant ID: 313004.** This project consists of *air infiltration* and *duct sealing* for two heat pump systems. During the desk review, the EM&V team adjusted the heating seasonal performance factor (HSPF) value for both heat pump systems from *7.3* to *7.6* and *9.2 to 9.5* HSPF based on specification sheets. This adjustment resulted in an overall project-level realization rate of 97.9 percent and 100.0 percent for energy and demand savings, respectively.
- **Participant ID: 313006**. This project consists of *air infiltration* and *duct sealing* for an AC with gas system. During the desk review, the EM&V team adjusted the seasonal energy efficiency ratio (SEER) value for the AC system from *14 to 15* SEER based on specification sheets. This adjustment resulted in an overall project-level realization rate of 93.3 percent for both energy and demand savings.
- **Participant ID: 313007.** This project consists of *air infiltration, ceiling insulation, two APS,* and *duct sealing* for an AC with a gas system. During the desk review, the EM&V team found that the *ceiling insulation square footage* tracked did not match the documentation; the EM&V team adjusted the square footage to match the documentation. The EM&V team also found only one *APS*, not two, and adjusted accordingly. The adjustments resulted in an overall project-level realization rate of 94.1 percent and 99.7 percent for energy and demand savings, respectively. After a review with the implementor, the EM&V team agreed to adjust the square footage and savings accordingly resulting in realization rates of 93.5 percent and 98.9 percent for energy and demand, respectively.

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- **Participant IDs: 313008.** This project consists of *air infiltration, one APS,* and *duct sealing* for an AC with an electric resistance system. During the desk review, the EM&V team found the AC nameplate was illegible and adjusted the SEER value to the *default 11.5* SEER. The APS documentation does not show the location or use of the *APS*; therefore, the *APS* location was adjusted from *home office* to *average APS* for the home. However, only one system was plugged into the controlled outlets, so it is likely that the savings are overestimated. The adjustments resulted in an overall project-level realization rate of 104.1 percent and 120.9 percent for energy and demand savings, respectively. After a review with the implementor, the EM&V team agreed to adjust the SEER value and savings accordingly resulting in realization rates of 101.1 percent and 101.6 percent for energy and demand, respectively.
- **Participant IDs: 313009.** This project consists of *air infiltration, one APS,* and *duct sealing* for an AC with a gas system. During the desk review, the EM&V team found the *APS* documentation did not show the location or use of the *APS*. Therefore, the *APS* location was adjusted from *home entertainment* to *average APS* for the home. However, only one system was plugged into the controlled outlets, so it is likely that the savings are overestimated. The adjustments resulted in an overall project-level realization rate of 98.2 percent and 99.6 percent for energy and demand savings, respectively.
- **Participant IDs: 313015.** This project consists of *duct sealing* for two heat pump systems. During the desk review, the EM&V team adjusted the HSPF value for both heat pump systems from *8* to *7.7* HSPF based on specification sheets. This adjustment resulted in an overall project-level realization rate of 102.7 percent and 100.0 percent for energy and demand savings, respectively.
- **Participant IDs: 413003.** This project consists of *air infiltration, one APS,* and *duct sealing* for an AC with a gas system. During the desk review, the EM&V team found the *APS* documentation did not show the location or use of the *APS*; therefore, the *APS* location was adjusted from *home entertainment* to *average APS* for the home. However, only one system was plugged into the controlled outlets, so it is likely that the savings are overestimated. The adjustments resulted in an overall project-level realization rate of 92.7 percent and 97.9 percent for energy and demand savings, respectively.
- **Participant IDs: 413006.** This project consists of *a tune up* of a heat pump system. During the desk review, the EM&V team adjusted the *capacity* to the *measured capacity* as stipulated in the TRM. This adjustment resulted in an overall project-level realization rate of 94.3 percent and 80.7 percent for energy and demand savings, respectively.
- **Participant IDs: 413009.** This project consists of *air infiltration, one APS,* and *duct sealing* for an AC with a gas system. During the desk review, the EM&V team adjusted the SEER value from *14* to *15* SEER based on specification sheets. The EM&V team found the APS documentation did not show the location or use of the *APS*; therefore, the *APS* location was adjusted from *home office* to *average APS* for the home. However, only one system was plugged into the controlled outlets, so it is likely that the savings are overestimated. The adjustments resulted in an overall project-level realization rate of 115.9 percent and 102.3 percent for energy and demand savings, respectively.
- **Participant ID: 413011.** This project included *air infiltration, duct sealing*, and the installation of two *APS*. This site was sampled for implementation QA/QC and EM&V on-site verification. The EM&V team adjusted the heating type from *electric resistance heat* to *heat pump* based on the condenser nameplate photo shown in the documentation and found during the site visit. The EM&V team also adjusted the quantity of installed *APS*

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from *2* to *0*. The *APS* in the kitchen area was found unplugged during the on-site visit. The customer had no appliances to control in its home entertainment system, as there were no associated appliances to pair with the television. During the site visit, the *APS* in the bedroom was unknown to the QA/QC team, but photos show that nothing was plugged in to contribute to savings. These adjustments resulted in an overall project-level realization rate of 48.6 percent and 94.1 percent for energy and demand savings, respectively.

- **Participant ID: 413012.** This project included *duct sealing* and the installation of one *APS*. This site was sampled for implementation QA/QC and EM&V on-site verification. The implementation QA/QC tested the *duct sealing* using a *duct blaster* test and found substantially higher CFM than the reported CFM. The EM&V team adjusted the CFM_{post} from *180* to *248 CFM* based on the results found during the site visit. The implementor adjusted energy savings to match the QA/QC results but did not appear to adjust demand savings. The EM&V team also adjusted the quantity of installed APS from *1* to *0*; the APS was found unplugged during the on-site visit. The customer had no appliances to control in its home entertainment system, as there were no associated appliances to pair with the television. These adjustments resulted in an overall project-level realization rate of 57.3 percent and 47.5 percent for energy and demand savings, respectively.
- **Participant ID: 413015.** This project included *duct sealing* and the installation of one *APS*. This site was sampled for implementation QA/QC and EM&V on-site verification. The EM&V team found that nothing was plugged into the *APS* and adjusted savings accordingly. These adjustments resulted in an overall project-level realization rate of 96.1 percent and 96.2 percent for energy and demand savings, respectively.

Overall, program-level realization rates based on desk reviews were 95.8 percent and 98.8 percent for energy and demand savings, respectively, due to the adjustments discussed above.

Table 78. Low-Income Solutions—Desk Review Results

Measure	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	kWh realization rate	kW realization rate
Air Conditioner Tune-Up - Manifoldi measurement	1,640	0.9	1,640	0.9	100.0%	100.0%
Air Infiltration	16,872	5.6	16,139	5.6	95.7%	100.0%
Ceiling Insulation	4,641	3.0	4,641	3.0	100.0%	100.0%
Duct Sealing - AC with Resistance Heat (Tested)	59,267	5.6	54,503	5.6	92.0%	100.0%
Duct Sealing - Electric Cooling (Tested)	11,986	6.4	11,958	6.2	99.8%	97.0%
Duct Sealing - Heat Pump (Tested)	64,178	11.0	64,211	11.0	100.1%	100.0%
Low Flow Faucet Aerator	269	0.0	268	0.0	99.6%	99.6%
Low Flow Showerheads	1,798	0.2	1,793	0.2	99.7%	99.7%

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Measure	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	kWh realization rate	kW realization rate
Residential Heat Pump Tune-Up	2,250	0.4	2,123	0.3	94.3%	80.7%
Smart Strip (Direct Install)	2,687	0.3	1,426	0.2	53.1%	52.5%
Total	**165,588**	**33.4**	**158,704**	**33.0**	**95.8%**	**98.8%**

7.4.3 On-Site Verification Results

Five projects received on-site verifications to examine the accuracy of the parameters and measurements reported by trade allies and to verify the installation of the incentivized measures. The EM&V team did not perform testing but made process observations and verified measure installation. On-site projects also received a desk review to compare documentation to data collected on-site. Details from the adjustments based on on-site data collection were rolled into the desk review project-level results in the previous section.

Overall, program-level realization-based on-site visits were 71.0 percent and 97.4 percent for energy and demand savings, respectively, as detailed in Table 79. The Desk Review Results section (Section 7.4.2) above details findings from projects that did not receive 100 percent realization rates.

Table 79. Low-Income Solutions—On-Site Verification Results

Measure category	Reported savings (kWh)	Reported savings (kW)	Evaluated savings (kWh)	Evaluated savings (kW)	kWh realization rate	kW realization rate
Building envelope	2,646	1.2	1,914	1.2	72.3%	100.0%
Home electronics	1,261	0.2	252	0.0	20.0%	20.0%
HVAC	18,456	2.9	13,711	2.9	74.3%	100.4%
Total	**22,364**	**4.3**	**15,877**	**4.2**	**71.0%**	**97.4%**

7.5 OVERALL SAVINGS ESTIMATES

The EM&V team used desk reviews, tracking system reviews, and on-site verifications to calculate the program-level realization rates. Program realization rates indicate that the LISO achieved similar energy and demand savings. Adjustments based on desk reviews or on-site verifications were incorporated into realization rates, resulting in 96.6 percent for energy savings and 98.3 percent for demand savings. Table 80 shows the final savings.

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Table 80. Low-Income Solutions—Final Evaluated Energy Savings and Realization Rates by Measure Category[43]

Measure	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Air Conditioner Tune-Up - Manifoldi measurement	122,152	68.6	122,153	68.6	100.0%	100.0%	Desk review and tracking system review
Air Infiltration	833,356	183.6	797,171	183.6	95.7%	100.0%	Desk review, on-site verification, and tracking system review
Ceiling Insulation	695,239	433.2	695,239	433.2	100.0%	100.0%	Desk review and tracking system review
Duct Replacement - Heat Pump	7,141	1.1	7,141	1.1	100.0%	100.0%	Tracking system review
Duct Sealing - AC with Resistance Heat (Tested)	2,081,094	195.0	1,913,812	195.0	92.0%	100.0%	Desk review, on-site verification, and tracking system review
Duct Sealing - Electric Cooling (Tested)	823,410	450.6	821,527	437.3	99.8%	97.0%	Desk review, on-site verification, and tracking system review
Duct Sealing - Heat Pump (Tested)	2,502,351	420.0	2,503,646	420.0	100.1%	100.0%	Desk review and tracking system review
Low Flow Faucet Aerator	24,807	2.6	24,718	2.6	99.6%	99.6%	Tracking system review and desk review
Low Flow Showerheads	125,373	13.0	125,044	13.0	99.7%	99.7%	Desk review and tracking system review
Residential Central Air Conditioner Tune-up	1,558	0.9	1,558	0.9	100.0%	100.0%	Tracking system review
Residential Heat Pump Tune-Up	609,747	108.3	575,002	87.2	94.3%	80.6%	Desk review and tracking system review
Smart Strip (Direct Install)	83,803	10.0	44,481	5.2	53.1%	52.5%	Desk review, tracking system review, and on-site verification
Smart Thermostats	43,915	-	43,915	-	100.0%	100.0%	Desk review and tracking system review
Total	**7,953,946**	**1,886.8**	**7,675,406**	**1,847.6**	**96.5%**	**97.9%**	

[43] A dash indicates that there are no kilowatt savings associated with the respective measure.

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7.6 QUALITY CONTROL/QUALITY ASSURANCE PROCESSES

The implementation team randomly selects properties to receive post-installation verification as part of the program's QA/QC process, verifying measurements taken by trade allies or performing non-invasive visual inspections of work. When work is deemed insufficient, trade allies must typically revisit the site and perform additional work to bring the site's performance up to program standards. For projects that fail the QA/QC *blower door* or *duct sealing* testing, the trade ally also has the option to accept the QA/QC tested result rather than return to the customer's home. If the trade ally returns to the home, additional documentation of the new work and test results is collected and applied to the project. Once the QA/QC process is complete, the project is processed.

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8.0 POINT OF PURCHASE SOLUTIONS

Beginning in program year (PY) 2020 (PY2020), Entergy Arkansas, LLC's (EAL) midstream and upstream programs merged into the comprehensive Point of Purchase Solutions (POPS) program. The program aims to provide fast and easy energy efficiency solutions to residential and nonresidential customers at retailers where they already shop in-store, through trade allies, or online through EAL's Marketplace. Discounts are offered for efficient lighting products, appliances, HVAC, weatherization, and other equipment. The program's long-term goal is to minimize barriers that hinder EAL customers from adopting energy efficiency measures and products.

For *residential upstream* customers, retailers and distributors are incentivized to provide point-of-sale discounts on select energy-efficient equipment. This approach has two main advantages: (1) it can be implemented quickly, and (2) it eliminates the rebate application process, making it more streamlined and reducing upfront customer costs. The *residential upstream* segment constitutes the largest part of the POPS program, contributing 84 percent of reported energy savings in PY2024. Customers can access measures through retail stores, community retail events, or corporate continuous energy improvement (CEI) events. Additionally, a significant portion of this segment (making up 44 percent of overall reported energy savings) focuses on low-income customers, offering products at designated low-income retail stores, community events, or food banks.

Customers must provide their company and contact information for c*ommercial midstream* participation for program tracking. Effective collaboration with retailers and distributors, along with clear communication channels, are essential strategies for promoting incentivized measures through these channels.

For *residential downstream* customers, point-of-purchase rebates are available for select energy-efficient *appliances*, *lighting*, *smart thermostats*, *domestic hot water systems*, and *envelope* measures. The downstream segment also includes *appliance recycling* for refrigerators and freezers. Rebate applications can be submitted via mail-in forms, an online form to be taken to participating thermostat retailers, or through purchases made in the online Marketplace. There is also an avenue for new Entergy customers to receive measures when they request a free new mover kit through the Marketplace.

For the PY2024 evaluation, the evaluation, measurement, and verification (EM&V) team conducted a full impact evaluation and full process evaluation. Activities included in the PY2024 evaluation are program staff interviews, materials review, residential and consumer customer surveys, market actor interviews, desk reviews of 30 randomly selected *commercial midstream lighting* projects, desk reviews of 20 randomly selected *residential upstream* measure/retailer/month combinations, and a full tracking system review.

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Table 81. Point of Purchase Solutions—PY2024 Data Collection and Evaluation Activities

Net-to-gross (NTG) approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site M&V	Metered data analysis[44]
PY2024 Participant surveys and market actor interviews triangulated	Program staff interviews (2) Participant surveys (221) Market actor interviews (13)	Census	50	None	None

8.1 KEY FINDINGS

Based on the PY2024 program tracking data,[45] the POPS program reported implementing 727,681 measures to 310,782 unique participants[46]. Table 82 provides the program's participation and reported savings by measure category. In PY2024, *residential envelope* projects provided the most savings, with approximately 44 percent of overall savings for the POPS program.

Table 82. Point of Purchase Solutions—PY2024 Reported Participation, Measures, and Savings

Measure category	Participants*	Quantity	Gross program savings (kWh)	Percentage of program savings (kWh)
Agricultural lighting	1	312	284,533	0.4%
Commercial lighting	369	19,744	8,148,271	12.2%
Residential appliances	11,257	11,475	5,947,193	8.9%
Residential domestic hot water**	69	64	77,850	0.1%
Residential envelope	140,601	526,780	29,263,279	43.8%
Residential HVAC	663	725	908,476	1.4%
Residential lighting	4	8	44	0.0%
Residential other	168,504	168,614	22,169,532	33.2%
Total	**310,782**	**727,681**	**66,792,781**	**100.0%**

*Individual participants may install equipment from multiple measure categories.

**There were nine returns in the *residential domestic hot water* category (line items with a quantity of -1).

[44] This column refers to EAL customer meter data provided to the EM&V team as opposed to primary metered data collected as part of the on-site measurement and verification (M&V).
[45] The tracking system data extract is from January 20, 2025.
[46] For measures without a defined account number, see methodology in Section 8.3.1.

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In PY2024, the POPS program reported 66,793 MWh in gross energy savings and 6.9 MW in gross demand savings, as shown in Table 83. The POPS program's evaluated savings resulted in energy and demand savings (99.3 percent kilowatt and 100.5 percent kilowatt-hour realization rates) similar to those calculated by the program implementer. The EM&V team's adjustments drive these results. The primary adjustment that decreased energy savings was related to the *exterior fixtures* in midstream lighting. The primary adjustment that increased energy savings was associated with *interior fixtures* in midstream lighting. The evaluation team applied NTG ratios for each measure at either the delivery channel or delivery channel/measure combination level, resulting in an overall NTG ratio of 87.4 percent for energy savings and 86.1 percent for demand savings. The program exceeded planning goals for energy, achieving 104 percent of energy, but did not meet planning goals for demand, achieving 91 percent of demand savings.

Table 83. Point of Purchase Solutions—PY2024 Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	66,793	66,341	99.3%	87.4%	57,949	23.0%
Demand savings (MW)	6.9	7.0	100.5%	86.1%	6.0	7.5%

Table 84. Point of Purchase Solutions—PY2024 Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	55,525	57,949	104.4%
Demand savings (MW)	6.6	6.0	91.0%

Due to the multiple delivery channels within the POPS program, the EM&V team provides the process and NTG evaluation results by channel rather than overall.

8.1.1 Commercial Midstream

Participating customer respondents reported high satisfaction with the program and program aspects. All respondents reported being *very satisfied* or *satisfied* with the program overall and said they would recommend the program to others. Almost all respondents (91 percent) were aware that EAL was responsible for providing the discount for the *lighting* equipment, but they were less aware of other energy efficiency program offerings for C&I customers. The awareness of the midstream offering was most often f*rom their contractor or vendor* (66 percent).

Participating distributors also reported high satisfaction with the program, providing ratings of *very satisfied* and *satisfied* with the program. The EM&V team’s interviews suggest the program has minimally affected stocking practices; three distributors reported *no change* in their stocking, while two either *increased or streamlined* their stock of program-eligible equipment. The interviews suggested the program had a more notable impact on distributor sales than on stocking practices. Four of the six distributors reported that their sales of program-eligible lighting *would have been lower* if the program had not offered discounts; of the distributors that said their sales of program-eligible lighting *would have been lower* absent the program’s

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discounts, the decrease in sales ranged from 5−20 percent. Two of the six distributors said their sales of program-eligible lighting *would have been the same* without the program's incentives and discounts.

8.1.2 Upstream

Participating retailers reported being satisfied with the program. Most retailers have been involved with the program for at least four years and have built relationships with the program implementers and staff. Most did not find the program difficult to be a part of. When asked how the program impacted their sales, five retailers said their sales *would have been lower* without the program; the amount of the change ranged from 8−100 percent. Another retailer said they *would have sold some but not a lot*. The three suppliers mentioned *stocking more program-eligible products* depending on what is incentivized during the program year.

Communication between retailers and the implementation contractor was mixed. While some (three) felt the interactions were positive, others felt additional communication would be valuable. Suggestions included *annual updates on the program's status and focus*, spotlighting new items added to the program, regular communication, and providing signage for the stores.

8.1.3 Downstream

The downstream portion of the program collected feedback from respondents in four delivery channels: Appliance Recycling, Mail-In Rebates, Marketplace, and New Mover Kits. In general, satisfaction with the program is high, with over one-half of respondents being *very satisfied* and another 39 percent being *satisfied*. Satisfaction was highest among participants in the Appliance Recycling delivery channel. Although almost one-half of the participants in the Mail-in Rebate delivery channel were *very satisfied* (48 percent), this delivery channel also exhibited the highest dissatisfaction rates (7 percent). Customers receiving new mover kits showed the greatest share of indecision: One in ten were *neither satisfied nor dissatisfied*. Satisfaction with EAL as an energy provider was also high and consistent across delivery channels.

8.1.4 Net-to-Gross

Due to the diverse sectors, delivery channels, and measures offered in the POPS program, the EM&V team established NTG ratios at the sector, delivery channel, and delivery channel/measure levels. Where there were sufficient survey completes (ten or more), the EM&V applied the NTG ratios at the channel/measure level. However, the NTG ratio was applied at the delivery channel level in most cases. The results of the NTG research by delivery channel are presented in Table 85 below.

For the upstream residential sector, the team recommends an NTG ratio of 70 percent for general population sales at non-low-income retail stores and 100 percent for both general community and corporate events, as well as low-income targeted sales (e.g., discount stores in low-income areas and giveaway events with nonprofits). For commercial midstream, the team recommends an NTG ratio of 65 percent. There was also a sufficient number of survey completes to determine measure-level NTG ratio of 69 percent for *exterior* and 62 percent for *interior fixtures*. The team recommends an NTG ratio by delivery channel for the residential downstream sector, ranging from 49−127 percent, averaging 84 percent overall. Where sufficient surveys are completed, the EM&V team recommends measure-level NTG values.

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Detailed results supporting these recommendations are found in the Net-to-Gross Results section (Section 8.8).

Table 85. Point of Purchase Solutions—PY2024 NTG Ratio Recommendations by Delivery Channel

Sector	Delivery channel	NTG recommendation
Residential upstream	Retail—non-low-income	70%
	Retail—low-income	100%
	Food bank	100%
	Events—low-income	100%
	Events—corporate	100%
	Events—community	100%
Commercial midstream	Trade allies	65%
Residential downstream	Mail-in rebates	62%
	Appliance recycling	49%
	Marketplace—purchase	100%
	Marketplace—new mover kit	127%

8.2 RECOMMENDATIONS

The EM&V team found ten areas for program improvement. Specific recommendations to address these areas are described in Table 86.

Table 86. Point of Purchase Solutions—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Report delivery method of measures and low-income status within ArchEE.	The EM&V team faced challenges in differentiating energy efficiency measures and delivery methods within the ArchEE data, requiring frequent discussions with the implementation team for clarification. Key difficulties included identifying *low-income* versus *non-low-income* stores, distinguishing between community events where measures were *purchased* versus *given away*, and categorizing *community events* separately from *corporate events*. Relevant information was scattered across multiple ArchEE fields. Enhancing data clarity would improve QA/QC efforts and streamline savings reporting, as different delivery methods can affect NTG or in-service rate (ISR) values in savings calculations.

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Type	Recommendation	Key finding
	Recommendation 2: Remove tube caulking products not intended for weatherizing residential doors and windows from the program.	The EM&V team identified nine models of tube caulking that were marketed for *kitchen, bath, and interior paint/trim applications* rather than for *exterior use on doors and windows*. For PY2025, the EM&V team recommends reevaluating all weatherization products incentivized by the program to ensure they are suitable for weatherization purposes and revisiting QA/QC processes to ensure incentivized products meet eligibility requirements.
	Recommendation 3: Review employee zip codes at CEI events more carefully to ensure energy savings are not being claimed for products given to non-Entergy customers.	The EM&V team identified during the desk reviews that energy savings associated with *weatherization* measures were claimed for measures given to all employees at CEI events, regardless of status as Entergy customers. The EM&V team recommends only claiming energy savings for corporate employees who live within Entergy's territory.
	Recommendation 4: Adjust implementation and enhance QA/QC of *appliance recycling* measures to ensure eligibility guidelines are not violated.	The EM&V team identified during the tracking system review that four customers had recycled a second freezer or cooler, which violates program rules that limit customers to recycling *one* refrigerator or freezer within a seven-year period. The EM&V team recommends revising the eligibility and qualification process of the Appliance Recycling delivery channel and enhancing QA/QC protocols to ensure that customers cannot recycle more than one refrigerator or freezer in a given program year or within the previous six program years.
	Recommendation 5: Apply an ISR of 0.60 to *weatherization* measures distributed via CEI corporate events.	The EM&V team identified during the desk reviews that energy savings associated with *weatherization* measures at CEI events were calculated with an ISR of 0.85, rather than 0.60, as approved in the methodology. The EM&V team recommends adjusting the savings algorithms for *weatherization* measures given away at corporate events.

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Type	Recommendation	Key finding
PY2024 process recommendations	**Recommendation 6:** Update the program manual to enhance clarity.	The evaluation team found the program manual to be uncharged from previous years. The legacy equipment list appears outdated and does not include *bathroom* and *kitchen aerators* or *appliance recycling*. The program manual does not mention several delivery channels that deliver residential measures, including community retail events, community low-income giveaway events, corporate CEI events, giveaways at food banks, and products in both requested and free kits through the online Marketplace. Updating the program manual to reflect current program offerings would provide transparency and enhance QA/QC for program implementation.
	Recommendation 7: Include more detailed installation instructions for all equipment provided to customers as part of giveaways, kits, or the Marketplace. For the New Mover Kit, renters may find it difficult to understand how to use the sealer and caulk in their rental, so instructions specific to that group may be beneficial.	Respondents who received the New Mover Kit were likely to install the *advanced power strip* (*APS*) (92 percent), but much less likely to use the weatherization caulk (45 percent) or sealer (28 percent). Most of the equipment not installed is in storage, as respondents said they did not need it. Some also found the equipment difficult to install. Even in the cases where equipment was installed, they were not installed correctly. Only 14 of the 49 respondents who were sure of their *APS* status appeared to be using the APS in a manner that could save energy. The EM&V team recommends that the implementer enhance training documentation or collaborate with manufacturers to provide clearer instructions. This will help ensure that the incentivized *APS* delivers the expected energy savings.
	Recommendation 8: Provide distributors and retailers with annual updates at the start of the program year.	One challenge identified by retailers and distributors was the *lack of communication*. These groups would appreciate an annual update that could spotlight new items added to the program, explain any program requirements or delivery changes, and provide an overview of how the industry has shifted or other macro trends that establish context.
	Recommendation 9: Review the time to mail the rebate for the Mail-In Rebate delivery channel.	Eleven percent were *dissatisfied* or *very dissatisfied* with the time to receive a rebate. Timely distribution of rebates can impact overall satisfaction as well.

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Type	Recommendation	Key finding
	Recommendation 10: Collect phone numbers from Appliance Recycling participants.	The response rate for the Appliance Recycling delivery channel was lower than the other delivery channels due to the lack of phone numbers associated with those customers. The evaluation team used program data to identify phone numbers, but those numbers tend to be old and more likely to be non-working.

Table 87. Point of Purchase Solutions—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Apply an ISR of 0.67 to *APSs* that are distributed via giveaways.
	  ○ Continuing.
	• For *residential lighting*, increase QA/QC on the baseline and retrofit wattages reported in the tracking data.
	  ○ Reviewed and rejected. *Residential lighting* is no longer offered in the POPS program.
	• For *commercial midstream lighting*, increase QA/QC of *commercial midstream* program tracking data to reduce errors.
	  ○ Continuing.
	• Reconcile the kilowatt savings gap for the *POPS weatherization* measure.
	  ○ Completed.

BY2023 process recommendations	• Reorganize information presented on the *POPS* residential website and program manual to enhance clarity. ○ In progress. New measures have been added to the website, but the program manual was not updated with new measures, and discontinued lighting measures continued to be mentioned.

8.3 METHODOLOGY

This section details the evaluation activities for the impact evaluation.

8.3.1 Impact Evaluation

The evaluated savings results are based on savings calculations and adjustments made during the tracking system review, 30 engineering desk reviews of *commercial midstream lighting* measures, and 20 engineering desk reviews of *upstream residential* measures. Finally, the NTG ratio was applied as follows to achieve net savings:

- if sufficient information was collected regarding specific measures during the process evaluation, NTG was applied at the delivery channel and measure combination level;
- otherwise, NTG was applied at the delivery channel level.

The NTG ratios were based on research conducted in PY2024. NTG varied by measure type, ranging from 48−100 percent. All measures going to low-income customers, identified in the tracking data through conversations with the implementer, were given 100 percent NTG.

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Table 88 below shows what aspects of the impact evaluation were applied to each measure type.

Table 88. Point of Purchase Solutions—Evaluated and Net Savings Methodology

Measure	Method to deliver the measure	Method to obtain evaluated savings	NTG	NTG source
Advanced power strip—retail	Events – community	Tracking system review	100%	Delivery channel (DC)
	Marketplace – new mover kit	Tracking system review	127%	Delivery channel/ measure (DCM)
	Marketplace – purchase	Tracking system review	100%	DC
	Retail – non-low-income store	Tracking system review	70%	DC
	Retail – low-income store	Desk review	100%	DC
Advanced power strips MSC-5606	Events – community	Tracking system review	100%	DC
	Events – low-income	Tracking system review	100%	DC
	Food bank	Tracking system review	100%	DC
	Retail – non-low-income store	Tracking system review	70%	DC
	Retail – low-income store	Desk review	100%	DC
Appliance recycling – refrigerator	Appliance recycling	Tracking system review	48%	DCM
Appliance recycling – freezer	Appliance recycling	Tracking system review	50%	DCM
Bath aerator	Marketplace – purchase	Tracking system review	100%	DC
Cannabis dual purpose (vegetative + flowering)	Midstream – trade allies	Tracking system review	65%	DC
Efficient hot water (DHW) heaters—WH replacement w/ HPWH	Retail – non-low-income store	Tracking system review	70%	DC
ENERGY STAR dehumidifiers	Mail-in rebate	Tracking system review	62%	DC
	Marketplace – purchase	Tracking system review	100%	DC
	Retail – non-low-income	Tracking system review	70%	DC

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Measure	Method to deliver the measure	Method to obtain evaluated savings	NTG	NTG source
ENERGY STAR freezers	Mail-in rebate	Tracking system review	62%	DC
ENERGY STAR room air cleaners	Events – community	Tracking system review	100%	DC
	Mail-in rebate	Tracking system review	62%	DCM
	Marketplace – purchase	Tracking system review	100%	DCM
	Retail – non-low-income store	Tracking system review	70%	DC
Kitchen aerator	Marketplace – purchase	Tracking system review	100%	DC
LED night light	Marketplace – purchase	Tracking system review	100%	DC
Midstream: exterior fixtures	Midstream – trade allies	Desk reviews	69%	DCM
Midstream: interior fixtures	Midstream – trade allies	Desk reviews	62%	DCM
Midstream: interior lamps	Midstream – trade allies	Desk reviews	65%	DC
Pool pumps	Mail-in rebate	Tracking system review	62%	DC
POPS weatherization giveaway	Events – corporate	Desk reviews	100%	DC
	Events – low-income	Tracking system review	100%	DC
	Food bank	Desk reviews	100%	DC
	Marketplace – new mover kit	Tracking system review	127%	DC
POPS weatherization retail	Events – corporate	Desk reviews	100%	DC
	Events – low-income	Tracking system review	100%	DC
	Marketplace – purchase	Tracking system review	100%	DC
	Retail – low-income	Desk reviews	100%	DC
	Retail – non-low-income	Desk reviews	70%	DC
Smart thermostats—POPS only	Mail-in rebate	Tracking system review	67%	DCM
	Marketplace – purchase	Tracking system review	99%	DCM
	Online instant rebate at retailer	Tracking system review	83%	DCM[47]

[47] This channel delivery did not appear until Q4 PY2024. NTG was determined by averaging the NTG for Mail-In Rebate and Marketplace *smart thermostats*.

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In the POPS program, the EM&V team used the following definitions for the number of participants:

- The number of participants for the a*dvanced power strip: retail* and *advanced power strips MSC-5606* measures are the number of unique account numbers (obtained using the ArchEE database field *AccountNumber*) with that designated measure; added to the number of line items with the *-Invalid*, *0000-Invalid,* or *blank* account number, which had one or two *APS* quantities (participants that received one or two *APSs*); added to the number of *APS* in the line items with three or more APS measures (assumed one APS per participant) with the *-Invalid*, *0000-Invalid*, or *blank* account number.
- The number of participants for the *appliance recycling – refrigerator, appliance recycling – freezer, bath aerator, cannabis dual purpose (vegetative + flowering), ENERGY STAR® freezers, kitchen aerator, LED night light, midstream: exterior fixtures, midstream: interior fixtures, midstream: interior lamps, pool pumps, and smart thermostats—POPS only* measures is the number of unique account numbers (obtained using the ArchEE database field *AccountNumber*) with that designated measure.
- The number of participants for the *efficient hot water (DHW) heaters - WH replacement w/HPWH* measure is the quantity of water heaters incentivized (assuming one water heater per participant).
- The number of participants for the *ENERGY STAR dehumidifiers* and *ENERGY STAR air cleaners* measures is the number of unique account numbers (obtained using the ArchEE database field *AccountNumber*) with that designated measure; added to the number of line items with the *-Invalid* or *blank* account number, which have one or two dehumidifier/air cleaner quantities (participants that received one or two dehumidifiers/air cleaners); added to the number of dehumidifiers in the line items with three or more dehumidifier/air cleaner measures (assumed one dehumidifier/air cleaner per participant) with the *-Invalid* or blank account number.
- The number of participants for the *POPS weatherization* measure is the number of unique account numbers (obtained using the ArchEE database field *AccountNumber*) with that designated measure; added to the number of line items with the *-Invalid*, *0000-Invalid,* or *blank* account number, which have one, two, three, or four weatherization quantities (participants that received between one and four *weatherization* measures); added to the number of *weatherization* measures in the line items with a quantity of more than four measures (assumed four *weatherization* measures per participant) with the *-Invalid*, *0000-Invalid*, or *blank* account number.

In the POPS program, the EM&V team used the following definition for the quantity of measures:

- The quantity reported for each measure is the sum of the *Quantity* field in ArchEE.

8.3.1.1 Tracking System Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review used TRM 9.2 as a reference in the review of measure-level savings assumptions. The EM&V team reviewed the tracking systems linkage to TRM deemed savings and methods used to estimate savings. After the measure-level review, the EM&V team verified energy-savings calculations for engineering fundamentals, appropriateness, and accuracy.

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Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system are consistent with the savings outlined in TRM 9.2 used to estimate project savings. Third, it assessed the ability of the tracking system to support future evaluation needs.

The ArchEE tracking system, which supplied all participant and claimed savings, and for the most part, all measure level data for *prescriptive-based* measures, was used to check for systemic errors across a census of participants.

8.3.1.2 Desk Reviews

The engineering desk reviews explored the savings methodologies and documentation from POPS *commercial midstream lighting* and *upstream APS* and *weatherization* projects. The reviews inspected the available project documentation and emphasized key parameters for the deemed savings protocols from TRM 9.2, *commercial midstream lighting*, and the *POPS weatherization white paper* methodology. After determining the best source of the key parameters from the available documentation, the savings were calculated based on TRM 9.2 algorithms and compared to the reported savings.

The 30 *commercial midstream lighting* desk reviews were selected via simple random sampling. In PY2024, the sample was taken at an *AccountNumber* level, meaning that all *lighting* projects under the 30 sampled *AccountNumbers* were reviewed.

The 20 *upstream APS* and *weatherization* desk reviews were selected via simple random sampling on kilowatt-hour savings on unique address and invoice month combinations at the counts shown in Table 89 below. Upstream delivery (identified in the tracking data as items where account numbers are unknown) of the *advanced power strips MSC-5606, POPS weatherization retail, advanced power strips – retail,* and *POPS weatherization giveaway* were explored for this year's desk reviews, as these measures made up 83 percent of overall POPS claimed kilowatt-hour savings at the time of sampling.

Table 89. Point of Purchase Solutions—Upstream Program Data Collection—Target Completes and Sample Table

Measure	Sample	Desk reviews: target completes
Advanced power strips MSC-5606	7	7
POPS weatherization retail	7	7
Advanced power strip: retail	3	3
POPS weatherization giveaway	3	3

Desk reviews were conducted using data from Q1, Q2, and Q3. This evaluation design ensured that the EM&V team had enough time to address any issues observed in the field during the first half of PY2024, ensuring they could be reconciled before the year-end reporting of the POPS program.

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8.3.1.3 Documentation Review

To understand the POPS program, the EM&V team had biweekly meetings with program staff and reviewed all information available on EAL's website related to the program and supplemental documentation provided by EAL and CLEAResult, the program implementer. The EM&V team reviewed the PY2024 program manuals, the data tracking system, and the savings workbook.

8.3.2 Process Evaluation

This section details the methodologies for the downstream survey, midstream survey, market actor interviews, and NTG evaluation.

8.3.2.1 Downstream Survey

The downstream participant survey was used to inform the NTG and process evaluations for the downstream portions of the program based on the guidance outlined in the Arkansas TRM Version 9.2 Volume 1 EM&V Protocols. For the NTG evaluation, the survey included questions to estimate free-ridership and spillover for program participants. The questions varied slightly based on the type of participant (New Mover Kit, Mail-In Rebate, or Appliance Recycling). The participant survey investigated sources of awareness and preferred methods of communication, participation experiences, program satisfaction, and demographics to help inform the process evaluation.

8.3.2.1.1 Sampling Methodology for Downstream

Where possible, the Arkansas TRM recommends using a staggered data collection approach to collect free-ridership and spillover information to inform the NTG analysis. Free-ridership is best assessed as close as possible to participation, while spillover is best assessed after a reasonable amount of time has passed since participation.

With these considerations in mind, the participant survey sample frame consisted of customers who completed projects through the program between January 2023 and June 2024[48], stratified into three six-month participation periods. To limit the potential for recall issues, only participants in the last 12 months (July 2023–June 2024) were asked free-ridership questions and included in the free-ridership assessment. Participant spillover questions were asked in the first two participation periods, allowing more time for potential spillover effects.

Some participants purchased multiple measures or pursued more than one project. To limit the burden of survey participation for these customers and eliminate potential confusion about different measures or projects, we sampled one measure-category-level project per customer for the free-ridership and *like*-spillover assessments. To do this, we first assigned specific measures[49] tracked within ArchEE to measure categories for use in the survey. The table below summarizes the number of projects and total reported savings in the survey population by participation period and type of measure, as well as the survey questions for each stratum.

[48] Project dates were identified using ArchEE database field *InstallationDate*.
[49] Measures were identified using the ArchEE database field *MeasureDesc*.

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Table 90. Point of Purchase Solutions—Downstream Participant Summary (Jan 2023–Jun 2024)

Participation period	Measure category	Count of account numbers in population*	Count of measures in population	Reported (ex-ante) kWh	Survey questions		
					Free-ridership	Spillover	Process
Jan 2023–Jun 2023	Appliance recycling – refrigerator	1	1	1,104	✗	✓	✓
	Pool pumps	7	7	16,577			
	Smart thermostats	23	23	29,596			
	Total	**31**	**31**	**47,276**			
Jul 2023–Dec 2023	Advanced power strips	6	6	1,507	✓	✓	✓
	Appliance recycling – freezer	13	13	11,127			
	Appliance recycling – refrigerator	40	40	44,144			
	ENERGY STAR room air cleaners	11	11	4,124			
	ENERGY STAR dehumidifiers	2	2	224			
	Energy efficiency kits	95	95	33,841			
	POPS weatherization retail	3	12	1,907			
	Smart thermostats	169	169	249,568			
	Total	**324**	**348**	**346,443**			
Jan 2024–Jun 2024	Advanced power strips	3	3	837	✓	✗	✓
	Appliance recycling – freezer	79	79	67,620			
	Appliance recycling – refrigerator	227	227	250,517			
	ENERGY STAR room air cleaners	71	78	21,711			
	ENERGY STAR dehumidifiers	18	18	1,655			
	ENERGY STAR freezers	4	4	260			
	Energy efficiency kits	185	185	66,017			
	POPS weatherization retail	6	15	4,198			
	Smart thermostats	167	174	261,638			
	Total	**729**	**783**	**674,454**			
Grand total		**1,074**	**1,162**	**1,068,173**			

* The number of distinct account numbers is based on the *AccountNumber* field in the tracking data.

Accounts can have projects in multiple periods; therefore, the sum of the unique accounts per period is higher than the number of unique accounts displayed for the population.

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In addition to the participation period, we further stratified the survey sample by project type due to the differences in average project size, complexity, and level of program engagement. For most periods and measures, we drew a census of participants in the population. For the others, we drew a random sample of projects within each stratum (limiting to one project per customer), sufficient to complete the targeted number of surveys in each stratum with an assumption of a 25 percent response rate. The table below summarizes our sampling plan, including population counts and savings, and the target number of survey completes.

Table 91. Point of Purchase Solutions—Downstream Participant Survey Sample Plan

Participation period	Measure category	Count of account numbers in population*	Count of measures in population	Reported (ex-ante) kWh	Accounts to sample	Expected number of completed surveys**
Jan 2023 – Jun 2023	Appliance recycling – refrigerator	1	1	1,104	1	1
	Pool pumps	7	7	16,577	7	2
	Smart thermostats	23	23	29,596	23	6
	Total	**31**	**31**	**47,276**	**31**	**9**
Jul 2023 − Dec 2023	Advanced power strips	6	6	1,507	6	2
	Appliance recycling – freezer	13	13	11,127	13	4
	Appliance recycling – refrigerator	40	40	44,144	40	10
	ENERGY STAR room air cleaners	11	11	4,124	11	3
	ENERGY STAR dehumidifiers	2	2	224	2	1
	Energy efficiency kits	95	95	33,841	95	24
	POPS weatherization retail	3	12	1,907	3	1
	Smart thermostats	169	169	249,568	100	25
	Total	**324**	**348**	**346,443**	**270**	**70**
Jan 2024 − Jun 2024	Advanced power strips	3	3	837	3	1
	Appliance recycling – freezer	79	79	67,620	79	20
	Appliance recycling – refrigerator	227	227	250,517	100	25
	ENERGY STAR room air cleaners	71	78	21,711	71	18
	ENERGY STAR dehumidifiers	18	18	1,655	18	5
	ENERGY STAR freezers	4	4	260	4	1

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Participation period	Measure category	Count of account numbers in population*	Count of measures in population	Reported (ex-ante) kWh	Accounts to sample	Expected number of completed surveys**
	Energy efficiency kits	185	185	66,017	100	25
	POPS weatherization retail	6	15	4,198	6	2
	Smart thermostats	167	174	261,638	100	25
	Total	**729**	**783**	**674,454**	**481**	**122**
Grand total		**1,074**	**1,162**	**1,068,173**	**782**	**201**

Accounts can have projects in multiple periods; therefore, the sum of the unique accounts per period is higher than the number of unique accounts displayed for the population.

* The number of distinct account numbers is based on the *AccountNumber* field in the tracking data.

**The expected number of completed surveys is based on an assumed 25 percent response rate. The actual number of completed surveys depends on the level of response.

Tetra Tech's in-house Survey Research Center (SRC) implemented the participant survey via computer-assisted telephone interviews (CATI). The survey was fielded from December 11, 2024, to January 17, 2025, and averaged 11 minutes. The table below shows the response rates achieved.

Table 92. Point of Purchase Solutions—Downstream Participant Survey Response Rate

Disposition	Appliance Recycling	Mail-In Rebates	Marketplace	New Mover Kit	Overall
Sample	**228**	**100**	**223**	**191**	**742**
Business/residential line	0	0	0	0	0
Not a utility customer	0	0	0	0	0
Affiliated with utility	0	0	0	0	0
Eligible sample	**228**	**100**	**223**	**191**	**742**
Does not recall participating	3	6	12	13	34
Refusal	3	11	12	12	38
Incompletes (partial surveys)	0	0	0	0	0
Language barrier	2	0	1	1	4
Bad number	102	7	12	14	135
Attempted but not completed	81	49	124	101	355
Completes					
Completed	37	27	62	50	176
Response rate					
Response rate (completed/eligible sample)	**16.2%**	**27.0%**	**27.8%**	**26.2%**	**23.7%**

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8.3.2.2 Midstream Survey

The midstream participant survey was used to inform the NTG and process evaluations for the midstream portion of the program based on the guidance outlined in the Arkansas TRM Version 9.2 Volume 1 EM&V Protocols. For the NTG evaluation, the survey included questions to estimate free-ridership and spillover for program participants. The questions varied slightly based on the program providing a discount and not having to submit a rebate application. The participant survey investigated sources of awareness and preferred methods of communication, participation experiences, program satisfaction, and firmographics to help inform the process evaluation.

8.3.2.2.1 Sampling Methodology for Midstream

Like the NTG guidance for downstream programs, the Arkansas TRM recommends using a staggered data collection approach to collect free-ridership and spillover information to inform the NTG analysis of programs with midstream delivery channels, where possible. Free-ridership is best assessed as close as possible to participation, while spillover is best assessed after a reasonable amount of time has passed since participation.

With these considerations in mind, the participant survey sample frame consisted of customers who completed projects through the program between January 2023 and June 2024[50], stratified into three six-month participation periods. To limit the potential for recall issues, only participants in the last 12 months (July 2023–June 2024) were asked free-ridership questions and included in the free-ridership assessment. Participant spillover questions were asked in the first two participation periods, allowing more time for potential spillover effects.

To limit the respondent burden and the potential for project confusion, we aggregated all *lighting* completed in a participation period per customer for the free-ridership and spillover assessments. To do this, we aggregated the tracking data by the period, summing quantities (*Quantity*), discount amount (*TotalIncentiveAmount*), and kilowatt-hour savings (*KwhSavings*). Detailed measure descriptions were also aggregated and retained for reference in the survey; customer information was also retained for each project to identify customers responsible for multiple projects. The table below summarizes the number of projects and total reported savings in the survey population by participation period and type of measure.

Table 93. Point of Purchase Solutions—Midstream Participant Summary (Jan 2023–Jun 2024)

Participation period	Measure category	Count of account numbers in population*	Count of measures in population	Reported (ex-ante) kWh	Survey questions		
					Free-ridership	Spillover	Process
Jan 2023–Jun 2023	Exterior fixtures	1	19	38,168	✘	✓	✓
	Interior fixtures	3	100	31,501			
	Interior lamps	1	125	6,387			
	Total	**5**	**244**	**76,055**			

[50] Project dates were identified using ArchEE database field *InstallationDate*.

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Participation period	Measure category	Count of account numbers in population*	Count of measures in population	Reported (ex-ante) kWh	Survey questions		
					Free-ridership	Spillover	Process
Jul 2023–Dec 2023	Exterior fixtures	34	249	408,508	✓	✓	✓
	Interior fixtures	58	2,018	1,288,439			
	Interior lamps	34	3,521	257,412			
	Total	**112**	**5,788**	**1,954,360**			
Jan 2024–Jun 2024	Exterior fixtures	84	717	1,429,222	✓	✗	✓
	Interior fixtures	133	3,530	3,538,734			
	Interior lamps	85	6,294	349,020			
	Total	**251**	**10,541**	**5,316,975**			
Total		**331**	**16,573**	**7,347,390**			

* Number of unique accounts, identified by the variable *AccountNumber*, present in each period. Accounts can have projects in multiple periods; therefore, the sum of the unique accounts per period is higher than the number of unique accounts displayed for the population.

Once all measure categories were combined for a given account, by period, we randomly sampled projects within each period (limiting to one per customer). Where an account participated in multiple periods, we sampled the project in the most recent period. Thirty-seven different accounts participated in more than one period, which were removed from the eligible sample. Participation was greater in the most recent period, so more completed surveys were expected to come from that time frame. The table below summarizes our sampling plan, including population counts and savings, and the target number of survey completes.

Table 94. Point of Purchase Solutions—Midstream Participant Survey Sample Plan

Participation period	Count of account numbers in population	Count of measures in population	Count of eligible account numbers to sample*	kWh savings from eligible accounts**	Target completed surveys***
Jan 2023–Jun 2023	5	244	4	37,887	1
Jul 2023–Dec 2023	112	5,788	76	1,379,085	11
Jan 2024–Jun 2024	251	10,541	251	5,316,975	25
Total	**331**	**16,573**	**331**	**6,733,948**	**37**

*Excludes 37 accounts that participated in more than one period.

**Excludes savings associated with measures not installed in the most recent period for accounts that participated in more than one period.

***Assumes a 15 percent response rate.

Tetra Tech's in-house SRC implemented the midstream participant survey via CATI. The survey averaged 11 minutes. The table below shows the response rates achieved by participation period.

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Table 95. Point of Purchase Solutions—Midstream Participant Survey Response Rate

Disposition	January 2023–June 2023	July 2023–December 2023	January 2024–June 2024	Overall
Sample	**4**	**76**	**251**	**331**
Business/residential line	0	0	0	0
Not a utility customer	0	0	0	0
Affiliated with utility	0	0	0	0
Eligible sample				**331**
Does not recall participating	0	4	8	12
Refusal	0	3	9	12
Incompletes (partial surveys)	0	0	0	0
Language barrier	0	0	0	0
Bad number	0	2	8	10
Attempted but not completed	0	58	190	252
Completes				
Completed	0	9	36	45
Response rate				
Response rate (completed/eligible sample)	**0.0%**	**11.8%**	**14.3%**	**13.6%**

8.3.2.3 Market Actor Interviews

The market actor interviews were used to inform the process evaluation and support NTG analysis. The EM&V team interviewed six midstream distributors and seven upstream retailers who participated in the program during PY2024. Distributor interviews were conducted between November 22, 2024, and December 3, 2024, and upstream retailer interviews were conducted between December 5, 2024, and January 6, 2025, and included a mix of local stores, corporate stores, and equipment suppliers (e.g., Megalight, Greenlite, and SEG Products).

Interviews were semi-structured. Evaluators used a topic guide but followed the interview flow and modified questions as needed to fit the interviewee's circumstances. The interviews explored (1) sales of program-eligible equipment, (2) program interactions, (3) program satisfaction, and (4) program attribution indicators. As an additional approach to inform free-ridership, distributors were also asked to estimate what their PY2024 program-qualifying services sales would have been without the program.

8.3.2.4 Net-to-Gross Approach

The EM&V team collected data from participants, distributors, and retailers to support the NTG evaluation. Results were triangulated using the approaches below.

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i. Downstream Measures

As the Arkansas TRM does not call for *partial* free riders, respondents were either classified as *full* free riders (100 percent free-ridership) or *non-free* riders (zero percent free-ridership) based on their responses to key decision-making questions. For consistency and comparability with prior evaluation results, we used the same criteria for classifying free riders as used in previous evaluation research for EAL and this program. To be classified as a *full* free rider, respondents must indicate all the following conditions; respondents who did not meet all three of these conditions were classified as a *non-free* rider:

- they were already planning to purchase and install the project in the same year before learning about the program,
- their budget would have accommodated the full cost of the project in the absence of the program incentive, and
- they would have purchased the same or higher efficiency project within one year in the absence of the program.

For New Mover Kit participants to be classified as a *full* free rider, respondents must indicate all the following conditions; respondents who did not meet these conditions were classified as a *non-free* rider:

- they were already planning to purchase and install all the same items in the kit within the next 12 months before learning about the program, or they would have purchased and installed some of the items within the next 12 months[51] and
- their budget would have accommodated the full cost of the kit items in the absence of the program.

For Appliance Recycling participants to be classified as a *full* free rider, respondents must indicate both of the following conditions; respondents who did not meet both conditions were classified as a *non-free* rider:

- they would have removed the appliance and
- they would have removed it in the same year before learning about the program.

To assess participant spillover, the survey asked about recent purchases since the program participation of any additional energy-efficient equipment that was made *without* any financial assistance from EAL. We used a conservative approach and quantified only spillover for measures that were eligible for residential EAL incentives. Additionally, spillover was not quantified for Appliance Recycling, as the National Renewable Energy Laboratory's (NREL) Uniform Methods Project (UMP)[52] recommends no spillover because recycling programs do not provide an education component like other programs.

We assessed free-ridership or spillover rates for each respondent at the measure category level. Individual free-ridership and spillover rates were then weighted to adjust for proportional

[51] Note: Free-ridership was assigned based on the equipment mentioned.
[52] Chapter 7: Refrigerator Recycling Evaluation Protocol. The Uniform Methods Project: Methods for Determining Energy-Efficiency Savings for Specific Measures. https://www.nrel.gov/docs/fy17osti/68563.pdf

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sampling differences, non-response, and gross savings to calculate overall estimates representative of the program population.

ii. Midstream Measures

As the Arkansas TRM does not call for *partial* free riders, respondents were either classified as *full* free-riders (100 percent free-ridership) or *non-free* riders (zero percent free-ridership) based on their responses to key decision-making questions. For consistency and comparability with prior evaluation results, we used the same criteria for classifying free riders as used in previous evaluation research for EAL and this program. To be classified as a *full* free-rider, respondents must indicate all the following conditions; respondents who did not meet all three of these conditions were classified as a *non-free* rider:

- they were already planning to purchase the project in the same year before learning about the program,
- their budget would have accommodated the full cost of the project in the absence of the program discount, and
- they would have purchased the same or higher efficiency project within one year in the absence of the program.

To assess participant spillover, the participant survey asked about recent purchases since program participation of any additional energy-efficient equipment made *without* any financial assistance from EAL at locations within EAL's service territory. With midstream customers, any equipment of the same type and efficiency as the equipment installed through the program (referred to as *like* spillover) was not eligible for spillover since the customer likely received the equipment at a discounted price.

We assessed free-ridership or spillover rates for each respondent at the measure category level. Individual free-ridership and spillover rates were then weighted to adjust for proportional sampling differences, non-response, and gross savings to calculate overall estimates representative of the program population.

The EM&V team also conducted interviews with distributors. Feedback from distributors was triangulated with the participant.

i. Upstream Measures

For the upstream component of the program, the EM&V team conducted interviews with retailers and their program partners (i.e., MaxLite, MegaLight, Greenlite). As an alternate approach to assessing free-ridership, retailers and their partners were asked to estimate the change in their PY2024 sales of program-qualifying equipment had the program discounts *not been available*. Where estimates were provided, the EM&V team calculated a free-ridership estimate using the following equation:

$$Freeridership = 100\% - percentage\ decline\ in\ sales\ in\ absence\ of\ program$$

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8.4 DETAILED IMPACT EVALUATION RESULTS

This section presents the results of evaluation activities and details findings from the tracking system review and desk reviews. Results are reported at the measure level and program level based on the EM&V activities.

8.4.1 Tracking System Review

The EM&V team completed a qualitative review of the tracking system data as well as quantitative tracking-system-based savings calculations across the *prescriptive* measure categories. The tracking system review checked reported savings and performed evaluation savings calculations across the population using the parameters provided in ArchEE.

The EM&V team encountered challenges in distinguishing between various energy efficiency measures and their delivery methods within the ArchEE data. This necessitated frequent discussions with the implementation team for clarification. Specifically, the team struggled to identify *low-income* versus *non-low-income* stores, differentiate between community events where measures were *purchased* versus *given away*, and categorize *community events* separately from *corporate events*. This information was located in multiple ArchEE fields, including *ContractorLastName, Retailer, EquipmentDescription,* and *Store Number.* Since different delivery methods can result in varying NTG or ISR values in savings calculations, improving clarity in the data would enhance QA/QC efforts and streamline savings reporting.

The overall POPS program evaluated tracking system review resulted in nearly identical energy and demand savings (99.0 percent kilowatt-hour and 99.2 percent kilowatt realization rates) to those calculated by the program implementer. The evaluated savings were based on the results of adjustments made from completing engineering reviews of the program's tracking data. Only four measures—*aerators, dehumidifiers, LED night lights, and POPS weatherization retail*—had realization rates that did not round to 100 percent. *Residential aerators* claimed savings slightly lower than the evaluation team identified, leading to a realization rate of 101.5 and 101.3 percent for kilowatt-hour and kilowatt savings. *Dehumidifiers* had a realization rate of 100.0 percent for kilowatt-hour and 66.8 percent for kilowatt savings due to an internal error that has been corrected. *LED night lights* had a realization rate of 200 percent for kilowatt-hour savings because the deemed savings were not multiplied by the number of lights. *POPS weatherization retail* had a realization rate of 96.1 and 97.0 percent for kilowatt-hour and kilowatt savings because weatherization products given away at corporate and low-income community events used the incorrect ISR in the savings methodology.

Measure-category and measure-level tracking system review findings are shown in Table 96 and

Table 97 below. Further details of the measure-based conclusions follow in the sections following the tables.

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Table 96. Point of Purchase Solutions—PY2024 Tracking System Review Energy and Demand Savings and Realization Rates by Measure Category

Measure category	Ex-ante savings		Ex-post savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
Agricultural lighting	284,533	55.3	284,533	55.3	100.0%	100.0%
Commercial lighting	8,148,271	1,210.6	8,159,605	1,213.0	100.1%	100.2%
Residential appliances	5,940,796	701.4	5,936,887	690.7	99.9%	98.5%
Residential domestic hot water	77,850	6.8	77,851	6.8	100.0%	100.0%
Residential envelope	29,263,279	2,444.2	28,583,823	2,402.8	97.7%	98.3%
Residential HVAC	908,476	-	908,476	-	100.0%	-
Residential lighting	44	-	87	-	200.0%	-
Residential other	22,169,532	2,518.6	22,169,380	2,518.2	100.0%	100.0%
Total	**69,792,781**	**6,936.9**	**66,109,310**	**6,884.3**	**99.0%**	**99.2%**

Table 97. Point of Purchase Solutions—PY2024 Tracking System Review Energy and Demand Savings and Realization Rates by Measure

Measure	Ex-ante savings		Ex-post savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW[53]
Advanced power strip: retail	7,468,870	848.1	7,468,718	847.7	100.0%	99.9%
Advanced power strips MSC-5606	14,678,697	1,666.0	14,678,697	1,666.0	100.0%	100.0%
Appliance recycling – freezer	184,029	21.0	182,317	20.8	99.1%	99.1%
Appliance recycling - refrigerator	784,660	89.5	782,452	89.3	99.7%	99.7%
Bath aerator	70	0.0	71	0.0	101.5%	101.5%
Cannabis dual purpose (vegetative + flowering)	284,533	55.3	284,533	55.3	100.0%	100.0%
Efficient hot water (DHW) heaters—WH replacement w/HPWH	77,738	6.8	77,737	6.8	100.0%	100.0%
ENERGY STAR dehumidifiers	90,949	30.9	90,959	20.6	100.0%	66.8%
ENERGY STAR freezers	566	0.1	566	0.1	100.0%	100.0%
ENERGY STAR room air cleaners	4,880,592	559.9	4,880,592	559.9	100.0%	100.0%
Kitchen aerator	42	0.0	43	0.0	101.5%	100.9%
LED night light	44	-	87	-	200.0%	-
Midstream: exterior fixtures	2,039,699	-	2,039,699	-	100.0%	-
Midstream: interior fixtures	5,370,326	1,062.2	5,370,326	1,062.2	100.0%	100.0%
Midstream: interior lamps	738,246	148.4	738,246	148.4	100.0%	100.0%

[53] Not all measures reported demand savings. In these cases, no realization rate was applicable. In these instances, the kilowatt realization rate field is marked with a dash.

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Measure	Ex-ante savings		Ex-post savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW[53]
Pool pumps	21,965	4.4	21,965	4.4	100.0%	100.0%
POPS weatherization giveaway	11,652,261	948.3	11,652,258	951.7	100.0%	100.4%
POPS weatherization retail	17,611,018	1,495.9	16,931,565	1,451.1	96.1%	97.0%
Smart thermostats – POPS only	908,476	-	908,476	-	100.0%	-
Total	**66,792,781**	**6,936.9**	**66,109,310**	**6,884.3**	**99.0%**	**99.2%**

A dash indicates that there are no kilowatt savings associated with the respective measure.

8.4.1.1 Agricultural Lighting

- No issues found.

8.4.1.2 Commercial Midstream Lighting Program

- Three commercial midstream projects reported a baseline wattage of 0 W. The EM&V team adjusted the baseline to the appropriate wattage, per the POPS Commercial Midstream Lighting Methodology for qualified lighting. This resulted in a kilowatt-hour realization rate of 100.1 percent and a kilowatt realization rate of 100.2 percent for the measure category. This is a recurring issue from BY2023.

8.4.1.3 Residential Appliances

- **Dehumidifiers:** A kilowatt savings gap was found in 38 line items. Thirty-six of these line items were all associated with *upstream dehumidifiers* sold at Lowes stores in July 2024 and of the line items were associated with Marketplace *dehumidifiers*. The reason for the savings gap was due to an internal error. This resulted in an overall kilowatt realization rate of 66.8 percent for the measure.
- **Freezers:** No issues found.
- **Room air purifier/cleaners:** No issues found.
- **Appliance recycling:** The EM&V team identified two addresses that had two refrigerators recycled and two addresses that had two freezers recycled. Each address is only eligible to recycle one refrigerator and one freezer every seven years, so the EM&V team zeroed out the second entries in ArchEE. This resulted in a kilowatt-hour and kilowatt realization rate of 99.6 percent for the measure. This is a recurring issue from BY2023.

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8.4.1.4 Residential Domestic Hot Water

- **Bath and kitchen aerators:** All eight line items had a savings gap, as the reported savings appeared to differ by climate zone, deviating from the approved White Paper Methodology, which approved weighted average energy savings based only on *aerator flow rate*. Adjusting the methodology to the methodology approved in the white paper resulted in a kilowatt-hour realization rate of 101.5 percent and a kilowatt realization rate of 101.3 percent for the measure.
- **Water heater replacements (heat pump water heaters):** No issues found.

8.4.1.5 Residential Envelope

- **POPS residential weatherization retail:**
    - It was determined during the program manager interviews that all POPS weatherization retail measures with *CLEAResult* as the contractor company were given away at CEI events or low-income community events, yet the ISR for retail purchases was used in the savings calculations. The EM&V team adjusted the ISR for these measures from 0.85 to 0.60, which should be used for free kits and giveaways.
    - These adjustments resulted in a kilowatt-hour realization rate of 96.1 percent and a kilowatt realization rate of 97.0 percent for the measure.
- **POPS residential weatherization giveaway:** A slight rounding gap resulted in a kilowatt-hour realization of 100 percent and a kilowatt realization rate of 100.4 percent for the measure.

8.4.1.6 Residential HVAC

- **Window air conditioner replacement:** No units were incentivized in PY2024.
- **Smart thermostats:** Four line items applied the *propane factor* erroneously to the savings calculation. This is a recurring finding from PY2022 and BY2023. The therms realization rate still rounded to 100 percent for this measure.

8.4.1.7 Residential Lighting

- **LED night light:** All four line items had a savings gap, as the reported savings methodology did not appear to incorporate the quantity of night lights incentivized. Adjusting the methodology to include quantity resulted in a kilowatt-hour realization rate of 200 percent for the measure.

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8.4.1.8 Residential Other

- **Advanced power strips:**
    - In PY2024, a total of 168,605 *APSs* were incentivized, bringing the total number incentivized since PY2020 to 560,517. The evaluation team observes that the market may be approaching saturation with this many units incentivized; this saturation could lead to diminished returns on energy savings and reduced customer engagement.
    - One line item had a 734 percent kilowatt-hour realization rate and a 132 percent kilowatt realization rate. The reason for the savings gap could not be determined from the data provided. The EM&V team adjusted the savings to correspond with the quantity of *APSs* reported in the data.
    - Sixteen line items had a 50 percent kilowatt-hour and kilowatt realization rate. The reason for the savings gap could not be determined from the data provided. The EM&V team adjusted the savings to correspond with the quantity of *APSs* reported in the data.
    - These adjustments resulted in an overall kilowatt-hour and kilowatt realization rate of 100.0 percent for the measure.
- **Pool pumps:** No issues found.

8.4.2 Desk Reviews

As noted earlier, the BY2023 POPS program impact evaluation efforts included an engineering analysis for a sample of 30 account numbers with *commercial midstream lighting* projects and 20 retailer/month combinations of *upstream residential* projects.

8.4.2.1 Midstream Lighting Desk Reviews

The midstream engineering desk reviews showed mostly consistent TRM 9.2 and *commercial midstream lighting* methodology protocols across all measures. There were 16 *lighting* projects with slight retrofit wattage adjustments to match the certified wattage on the DesignLights Consortium (DLC) database. Two projects reported quantities of fixtures that were inconsistent with their respective invoices. Four projects used incorrect baseline wattages based on misclassification of the fixtures.

Table 98 provides account-level realization rates for the 30 account numbers reviewed during the desk reviews. Two of the 30 account numbers required savings adjustments of more than ten percent. Each customer was assigned an anonymous account number in the first column. A detailed description of the project with a realization rate adjustment follows.

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Table 98. Point of Purchase Solutions—Commercial Midstream Lighting PY2024 Desk Review Results by Project

Account number	Reported savings		Evaluated savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW[54]
1	1,832	0.4	1,832	0.4	100.0%	100.0%
2	329,059	64.8	329,448	64.8	100.1%	100.1%
3	21,704	4.4	21,705	4.4	100.0%	100.0%
4	1,277	0.3	1,277	0.3	100.0%	100.0%
5	810	0.2	810	0.2	100.0%	100.0%
6	11,935	1.5	11,935	1.5	100.0%	100.0%
7	22,959	4.5	22,959	4.5	100.0%	100.0%
8	135	0.0	135	0.0	100.0%	100.0%
9	45,514	-	19,591	-	43.0%	N/A
10	5,929	1.2	5,929	1.2	100.0%	100.0%
11	42,092	8.3	42,092	8.3	100.0%	100.0%
12	5,470	1.1	5,471	1.1	100.0%	100.0%
13	1,465	0.3	1,394	0.3	95.1%	95.1%
14	90,349	12.9	74,844	13.3	82.8%	102.6%
15	9,583	1.9	9,583	1.9	100.0%	100.0%
16	11,019	2.2	11,019	2.2	100.0%	100.0%
17	2,386	0.5	2,374	0.5	99.5%	99.5%
18	773	0.2	789	0.2	102.0%	102.0%
19	11,875	2.4	12,076	2.5	101.7%	101.7%
20	810	0.2	810	0.2	100.0%	100.0%
21	19,415	3.8	19,415	3.8	100.0%	100.0%
22	32,775	-	32,716	-	99.8%	N/A
23	42,358	7.5	42,354	7.5	100.0%	100.0%
24	2,889	0.6	2,889	0.6	100.0%	100.0%
25	7,400	1.5	7,400	1.5	100.0%	100.0%
26	7,562	1.5	7,562	1.5	100.0%	100.0%
27	2,062	0.4	2,062	0.4	100.0%	100.0%
28	56,705	10.1	56,655	10.1	99.9%	100.0%

[54] Not all projects reported demand savings. In these cases, no realization rate was applicable, and therefore, the kilowatt realization rate field is marked with a N/A.

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Account number	Reported savings		Evaluated savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW[54]
29	5,369	1.1	5,369	1.1	100.0%	100.0%
30	2,903	-	2,905	-	100.1%	N/A
Total	**796,416**	**133.6**	**755,400**	**134.1**	**94.8%**	**100.3%**

A dash indicates no kilowatt savings associated with the respective measure.

To incorporate the desk review findings and adjustments to savings into the overall impact evaluation, the EM&V team applied the realization rates at a measure-type level to the *commercial midstream lighting* energy savings reported in ArchEE. The realization rates by measure type are presented in Table 99 below. A detailed description of account-level adjustments follows.

Table 99. Point of Purchase Solutions—Commercial Midstream and Agricultural Lighting Desk Review Evaluated Energy Savings and Realization Rates by Installation Type

Measure type	Reported savings		Evaluated savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
Midstream: exterior fixtures	115,517	-	73,978	-	64.0%	N/A
Midstream: interior fixtures	633,039	124.8	633,583	124.9	100.1%	100.1%
Midstream: interior lamps	47,860	8.8	47,839	8.8	100.0%	99.9%
Total	**796,416**	**133.6**	**755,400**	**134.1**	**94.8%**	**100.3%**

A dash indicates no kilowatt savings associated with the respective measure.

Details of the project-based savings adjustments are provided below by participant number and EM&V Participant ID:

- **Account 2—JobId 20230302001992661 8.** An adjustment was made to the wattage for 88 light fixtures from the reported *220 W* to *219 W* to match the DLC certification database. This adjustment resulted in a realization rate of 100.1 percent in energy and demand savings for the customer.
- **Account 9—JobIds 20240221002031695 9, 20231206002028469 4, 20240220002031679 3, and 20240220002031679 6.** An adjustment was made to two line items:
  - The quantity of fixtures for one line item was adjusted from *eight* to *zero* as there was no invoice documentation showing the quantity of fixtures installed in February 2023 as claimed.
  - The quantity of fixtures for one line item was adjusted from *six* to *five* as the invoice documentation provided for the reported installation date in April 2023 showed only five fixtures. In that same line item, the baseline wattage was adjusted from *1,078 W* to *448.45 W* to match the classification of the installed light as an *outdoor fixture* with a lumen output between 9,000 and 19,999 lumens; the installed fixture produced 15,882 lumens.

  These adjustments resulted in a realization rate of 43.0 percent in energy savings for the customer.

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- **Account 13—JobIds 202408020020365093, 202408020020365094, and 202408020020365095.** An adjustment was made to three line items:
    - The wattage for four lights (across two line items) was adjusted from the reported *52 W* to *55.08 W* to match the DLC certification database.
    - The wattage for six lights in one line item was adjusted from the reported *15 W* to *16 W* to match the DLC certification database.

  These adjustments resulted in a realization rate of 95.1 percent in energy and demand savings for the customer.
- **Account 14—JobIds 202403150020322632, 202403150020322635, 202403150020322637, 202402130020314271, 202402130020314272, and202402130020314273**. An adjustment was made to three line items:
    - The baseline wattage for 12 lights (across three line items) was adjusted from the reported *448.5 W* to *125.66 W*, as the light was a strip light to be used indoors, not outdoors.

  This adjustment resulted in a realization rate of 82.8 percent in energy and 102.6 percent demand savings for the customer.
- **Account 17—JobId 202403150020322596**. An adjustment was made to the wattage for eight light fixtures from the reported *49.8 W* to *50.2 W* to match the DLC certification database. This adjustment resulted in a realization rate of 99.5 percent in energy and demand savings for the customer.
- **Account 18—JobId 202406210020355577**. An adjustment was made to the wattage for four light fixtures from the reported *45.3 W* to *44.3 W* to match the DLC certification database. This adjustment resulted in a realization rate of 102.0 percent in energy and demand savings for the customer.
- **Account 19—JobId 202404080020331253**. An adjustment was made to the wattage for 46 light fixtures from the reported *60 W* to *58.9 W* to match the DLC certification database. This adjustment resulted in a realization rate of 101.7 percent in energy and demand savings for the customer.
- **Account 22—JobIds 202409030020372875 and 202409030020372876**. An adjustment was made to two line items:
    - The wattage for eight lights in one line item was adjusted from the reported *150 W* to *151.5 W* to match the DLC certification database.
    - The wattage for one light in one line item was adjusted from the reported *300 W* to *302.8 W* to match the DLC certification database.

  These adjustments resulted in a realization rate of 99.8 percent in energy savings for the customer.

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- **Account 28—JobIds 20240603002034990 9, 20240603002034991 0, 20240603002034991 1, and 20240403002032856 7**. An adjustment was made to one line item:
    - The wattage for six lights in one line item was adjusted from the reported *55 W* to *57.1 W* to match the DLC certification database.

  This adjustment resulted in a realization rate of 99.9 percent in energy savings for the customer.

- **Account 30—JobIds 20240315002032259 2, 20240315002032259 3, 20240315002032259 4, and 20240315002032259 5**. An adjustment was made to four line items:
    - The wattage for four lights (across four line items) was adjusted from the reported *37.7 W* to *37.58 W* to match the DLC certification database.

  This adjustment resulted in a realization rate of 100.1 percent in energy savings for the customer.

8.4.2.2 Upstream Residential Desk Reviews

The upstream engineering desk reviews focused on the *POPS weatherization retail, POPS weatherization giveaway, advanced power strip: retail,* and *advanced power strips MSC-5606* measures across a variety of upstream delivery methods. There were a few adjustments identified during the review. Four *POPS weatherization retail* line items associated with corporate events were found to use the ISR related to *retail purchases* rather than *giveaways*, and measures were also given to employees who do not live in EAL's territory. One hundred twenty *POPS weatherization retail* line items were found to be associated with tube caulking that was marketed for *kitchen and bathroom applications* rather than for *weatherization of doors and windows*. Eight *POPS weatherization retail* line items were found to be associated with tube caulking that was marketed for *interior paint and trim applications* rather than for *weatherization of doors and windows*.

Table 100 provides account-level realization rates for the 20 unique address and invoice month combinations reviewed during the desk reviews. Three of the 20 desk reviews required savings adjustments of more than ten percent. Each desk review was assigned an anonymous ID number in the first column. A detailed description of the project with a realization rate adjustment follows.

Table 100. Point of Purchase Solutions—Upstream Residential PY2024 Desk Review Results by Project

Account number	Reported savings		Evaluated savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
1	5,524	0.6	5,524	0.6	100.0%	100.0%
2	1,841	0.2	1,841	0.2	100.0%	100.0%
3	12,053	1.4	12,053	1.4	100.0%	100.0%
4	167	0.0	167	0.0	100.0%	100.0%
5	24,106	2.7	24,106	2.7	100.0%	100.0%

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Account number	Reported savings		Evaluated savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW
6	3,181	0.4	3,181	0.4	100.0%	100.0%
7	167	0.0	167	0.0	100.0%	100.0%
8	8,654	0.7	8,657	0.7	100.0%	101.8%
9	4,366	0.4	4,367	0.4	100.0%	101.8%
10	264,163	46.3	158,422	13.1	60.0%	28.3%
11	3,255	0.3	3,256	0.3	100.0%	101.8%
12	37,920	4.8	26,779	3.4	70.6%	71.0%
13	116,792	9.3	82,477	6.5	70.6%	70.3%
14	922	0.1	923	0.1	100.1%	101.9%
15	2,344	0.3	2,344	0.3	100.0%	100.0%
16	20,088	2.3	20,088	2.3	100.0%	100.0%
17	12,053	1.4	12,053	1.4	100.0%	100.0%
18	4,538	0.4	4,539	0.4	100.0%	99.5%
19	7,944	0.6	7,945	0.7	100.0%	101.0%
20	23,729	3.0	23,733	3.0	100.0%	100.5%
Total	**553,806**	**75.1**	**402,620**	**37.8**	**72.7%**	**50.3%**

A dash indicates no kilowatt savings associated with the respective measure.

Details of the project-based savings adjustments are provided below by participant number and EM&V Participant ID:

- **Desk Review 10—POPS weatherization retail in non-low-income store.** An adjustment was made to 252 line items:
    - An adjustment was made to the ISR for 239 tubes of caulk from *0.85* to *0*, as the incentivized products were *kitchen and bath* tube caulk, rather than tube caulk for *weatherization of doors and windows*.
    - An adjustment was made to the ISR for 619 tubes of caulk from *0.85* to *0.425*, as the incentivized products were *interior paint and trim caulk*, rather than tube caulk for *weatherization of doors and windows*.

  These adjustments resulted in a realization rate of 60.0 percent in energy and 28.3 percent in demand savings for the customer.

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- **Desk Review 12—POPS weatherization retail at corporate event.** An adjustment was made to two line items:
    - The EM&V team found that 24 employees at the company where the CEI event was conducted live in Louisiana, presumably outside of EAL's territory. The EM&V team recommends that only energy savings be claimed for corporate employees who live within EAL's territory.
    - The ISR (on two line items) was adjusted from *0.85* to *0.60*, as the weatherization products were *given away*, rather than *retail purchases*.

  These adjustments resulted in a realization rate of 70.6 percent in energy and 71.0 percent in demand savings for the customer.
- **Desk Review 13—POPS weatherization retail at corporate event.** An adjustment was made to two line items:
    - The EM&V team found that two employees at the company where the CEI event was conducted live in Tennessee, presumably outside of EAL's territory. The EM&V team recommends that only energy savings be claimed for corporate employees who live within Entergy territory.
    - The ISR (on two line items) was adjusted from *0.85* to *0.60*, as the weatherization products were *given away*, rather than *retail purchases*.

  These adjustments resulted in a realization rate of 70.6 percent in energy and 70.3 percent in demand savings for the customer.

Due to the significant increase in upstream energy savings associated with the *POPS weatherization retail* measure in PY2024 and the introduction of the *tube caulking application*, the implementer revised the energy savings reported in ArchEE based on preliminary evaluation findings. The revised energy savings resulted in a 107 percent kilowatt-hour and 108 percent kilowatt realization rate for the *POPS weatherization retail* measure delivered at non-low-income retail stores because one tube of caulking product had its savings reduced incorrectly by the implementer. The realization rates by measure and delivery type are presented in Table 101 below.

Table 101. Point of Purchase Solutions—Upstream Residential Desk Review Evaluated Energy Savings and Realization Rates by Installation Type

Measure type	Delivery channel	Reported savings		Evaluated savings		Realization rate	
		kWh	kW	kWh	kW	kWh	kW
Advanced power strips - retail	Retail – low-income stores	34,484	3.9	34,484	3.9	100.0%	100.0%
Advanced power strips MSC-5606	Retail – low-income stores	47,039	5.3	47,039	5.3	100.0%	100.0%
POPS weatherization giveaway	Food bank	36,210	4.0	36,216	4.1	100.0%	100.5%

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Measure type	Delivery channel	Reported savings		Evaluated savings		Realization rate	
		kWh	kW	kWh	kW	kWh	kW
POPS weatherization retail	Events - corporate	154,712	14.1	109,256	9.9	70.6%	70.5%
	Retail – low-income stores	17,197	1.4	17,202	1.4	100.0%	101.8%
	Retail – non-low-income stores	148,168	12.1	158,422	13.1	106.9%	108.0%
Total		**437,811**	**40.9**	**402,620**	**37.8**	**92.0%**	**92.3%**

8.4.3 Documentation Review

To understand the POPS program, the EM&V team had biweekly meetings with program staff and reviewed all information on EAL's website related to the program and supplemental documentation provided by EAL and CLEAResult. The EM&V team received the following documentation related to the program:

- A data tracking system that documented all incentivized measures across different delivery channels.
- A 2020 EAL Midstream Lighting Savings Workbook showing the buildup of the *midstream savings* methodology. No changes to the midstream program were made for PY2024, so the 2023 EAL Midstream Lighting Savings Workbook was not updated. This workbook also contained calculated savings for each product on the Commercial Midstream Lighting Qualified Products List (QPL) using the *commercial midstream lighting* methodology outlined in the Arkansas TRM 9.2, as well as several legacy assumptions.
- PY2024 program manual for the POPS program, from the program website.

The EM&V team found a few minor issues in its review of project-level documentation, including:

- a few address differences between the documentation and the tracking system,
- a few phone numbers varying between the documentation and the tracking system,
- customer names varying slightly between the documentation and the tracking system,
- the end customer point of contact in the Participation Agreement differing from the name in the tracking system data in a few instances, and
- quantities and model numbers in the tracking system not matching the model numbers in the invoices for a few line items.

8.4.3.1 Program Website Review

The EM&V team reviewed the program's website, hosted on Entergy Arkansas's main website, to identify information available to customers and the user experience.

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8.4.3.1.1 Residential

Information found on the residential POPS program website includes:

- a general description of the program, as well as a link to external information about federal energy efficiency tax credits,
- a list of eligible energy efficient measures and their incentive levels, and
- information (organized by measure) about how to apply for and receive rebates or discounts.

The residential website is very well organized by energy efficient measures. A link to participating retailers is provided under each measure that can be purchased through retailers (*APSs*, *air purifiers, dehumidifiers, heat pump water heaters*, *weatherization, window air conditioners*). The participating retailer list includes the retailer's name, store number, and complete address. A link is provided under each measure that can be purchased through EAL's Marketplace (APSs, *air purifiers*, *dehumidifiers*, *freezers, smart thermostats, weatherization,* and *window air conditioners*). A rebate application form (either submitted online, mailed, faxed, or emailed) is provided under each measure that may require submitting a rebate application form (*freezers*, *air purifiers*, *dehumidifiers, smart thermostats*). Within each measure are also details on promotional periods or purchase limits per customer.

The program manual was also found on the website. The evaluation team found the program manual to be uncharged from previous years. The list of legacy equipment appears outdated as it included *LED bulbs and fixtures* as eligible measures, although *LED bulbs* have been removed from the program following BY2023. It also did not include *bathroom* and *kitchen aerators* or *appliance recycling*. The *Program Changes* section also continued to mention *2022* changes rather than note changes for *2024*, which included new measures (e.g., *aerators*, *LED night lights*) and delivery pathways (e.g., *air purifiers* and *dehumidifiers* offered at retail stores).

As with previous iterations, apart from *smart thermostats,* the manual organized measures by a few delivery channels (retail purchase, post-purchase mail-in/online rebate, online marketplace). While the evaluation team understood the intention, the manual organization could confuse participants. For example, *advanced power strips* are listed in two different sections (corresponding with retailers and the online Marketplace), and it can appear that there are various types of *APSs* available, some having *no application required* and some exclusively *incentivized through an online Marketplace*. Reorganizing the manual to match the website's format would help improve clarity for potential participants in the POPS program. This is a persistent finding from PY2022 and BY2023.

Finally, the program manual does not mention several delivery channels that deliver residential measures, including community retail events, community low-income giveaway events, corporate CEI events, giveaways at food banks, and products in both requested and free kits through the online Marketplace.

Finally, the *appliance recycling* measure has been added to the program website in two places (located in the same section as the *ENERGY STAR freezers* and at the bottom of the page, under the contact information and Marketplace link). For PY2024, a new *Appliance Recycling* webpage has been introduced, which provides an overview of the program, eligibility requirements, and information on scheduling a pick-up. However, the evaluation found that the language at the bottom of the webpage stating that the recycling program "is not a replacement program" and that "customer[s] must purchase a replacement appliance" does not align with the intent of the measure to remove secondary appliances from homes without requiring a

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replacement. It is recommended that the website language be revised to accurately reflect the program's goals and clarify that the recycling program is intended for the removal of secondary appliances without necessitating a replacement.

8.4.3.1.2 Commercial

Information found on the commercial POPS program website includes a link to the Participation Agreement, a comprehensive list of eligible energy efficiency measures (*lighting*, *variable frequency drives, electric hand dryers*, and *small air compressors*), along with their incentive discounts provided by the program, and a general description of the program, including who is eligible and how participation works. A link to participating distributors appears multiple times throughout the website for ease of access.

An updated copy of the 2024 POPS commercial manual was also found on the website. The commercial program manual was largely unchanged from previous years. The evaluation noted page four of the manual contains language about incentivizing ENERGY STAR-qualified *LED light bulbs* through June 30, 2024, along with specific incentive amounts. This appears to have been carried over from 2023 to the 2024 manual erroneously, as the program ceased incentivizing *general service lamp bulbs* on June 30, 2023.

Clicking the *participating distributors' list* link takes the user to a page listing all trade allies associated with the EAL energy efficiency program, including contractors and engineering consultants nationwide. While this information could be helpful to experienced participants in the program, this could be overwhelming to newer participants who may be expecting a list of local retail stores, given that the landing page states to "*sign the Participation Agreement and take it to a participating distributor*." Defaulting to a more streamlined list of retailers may reduce confusion and increase clarity for newer participants in the commercial POPS program. This is a persistent finding from PY2022.

8.5 OVERALL SAVINGS ESTIMATES

The POPS program evaluated savings resulted in energy and demand savings (100.5 percent kilowatt and 99.3 percent kilowatt-hour realization rates) similar to those calculated by the program. The evaluated savings are based on adjustments made during the tracking system review, and findings from completing 50 engineering desk reviews. Savings adjustments were made at the measure type/delivery level (see Table 88), although the opportunity for the implementer to adjust reported savings was made for *upstream weatherization* measures in PY2024 (see the *Upstream Residential Desk Reviews* section (Section 8.4.2.2).

The primary adjustment decreasing energy savings, as mentioned in Section 8.4.2.1, was related to *exterior midstream lighting*. Meanwhile, as mentioned in Section 8.4.2.2, the primary adjustment that increased energy savings was readjusting one tube caulking product to allow energy savings. Final savings results and realization rates are presented in Table 102.

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Table 102. Point of Purchase Solutions—Final Evaluated Energy Savings and Realization Rates by Measure

Measure category	Reported savings		Evaluated savings		Realization rate	
	kWh	kW	kWh	kW	kWh	kW[55]
Advanced power strip: retail	7,468,870	848.1	7,468,845	848.1	100.0%	100.0%
Advanced power strips MSC-5606	14,678,697	1,666.0	14,678,608	1,665.8	100.0%	100.0%
Appliance recycling - freezer	184,029	21.0	183,285	20.9	99.6%	99.6%
Appliance recycling - refrigerator	784,660	89.5	781,485	89.2	99.6%	99.6%
Bath aerator	70	0.0	71	0.0	101.5%	101.3%
Cannabis dual purpose (vegetative + flowering)	284,533	55.3	284,533	55.3	100.0%	100.0%
Efficient hot water heater	77,738	6.8	77,737	6.8	100.0%	100.0%
ENERGY STAR dehumidifiers	90,949	30.9	90,959	20.6	100.0%	66.8%
ENERGY STAR freezers	566	0.1	566	0.1	100.0%	100.0%
ENERGY STAR room air cleaners	4,880,592	559.9	4,880,592	559.9	100.0%	100.0%
Kitchen aerator	42	0.0	43	0.0	101.5%	101.3%
LED night light	44	-	87	-	200.0%	N/A
Midstream: exterior fixtures	2,039,699	-	1,306,235	-	64.0%	N/A
Midstream: interior fixtures	5,370,326	1,062.2	5,374,941	1,063.1	100.1%	100.1%
Midstream: interior lamps	738,246	148.4	737,928	148.4	100.0%	99.9%
Pool pumps	21,965	4.4	21,965	4.4	100.0%	100.0%
POPS weatherization giveaway	11,652,261	948.3	11,565,630	945.7	99.3%	99.7%
POPS weatherization retail	17,611,018	1,495.9	17,978,685	1,541.8	102.1%	103.1%
Smart thermostats	908,476	-	908,476	-	100.0%	N/A
Total	**66,792,781**	**6,936.9**	**66,340,673**	**6,970.1**	**99.3%**	**100.5%**

A dash indicates that there are no kilowatt savings associated with the respective measure.

8.6 QUALITY CONTROL/QUALITY ASSURANCE PROCESSES

CLEAResult uses a Quality Management Plan (QMP), including QA and QC components. Distributor and retailer qualification and training are QA approaches used to ensure quality from the program's start and ensure quality issues are not introduced further downstream in the process. QC inspections are used toward the end of projects to check the quality of the final savings. The QA/QC process lasts the project's duration and includes a feedback loop to ensure continuous program improvement.

[55] Not all measures reported demand savings. In these cases, no realization rate was applicable. In these instances, the kilowatt realization rate field is marked as N/A.

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According to the program manuals, the POPS program provides retailer and distributor training to educate staff on programs, works with retailers to set up promotional events, and conducts periodic check-ins with retailers to assess program effectiveness. Review of rebate applications, sales reports from manufacturers/retailers, and signage/pricing reports from field representatives (at least once a month), quality control inspections by field inspectors, and customer satisfaction surveys are other components of the quality assurance system outlined.

As mentioned earlier in Section 8.4.3.1.2, the program manual has not been updated to include other product delivery methods. Outlining QA/QC processes for other delivery methods, including corporate events, community events, food banks, free and purchased kits through the online Marketplace, and appliance recycling, is recommended to be included in future iterations of the program manual.

As part of the evaluation process, the EM&V team assessed the POPS program's QA/QC processes during the desk reviews for the *commercial midstream lighting* and *upstream residential* measures. The review did not identify any QA/QC associated with the *commercial midstream* program but did identify issues in the *upstream residential* program that perhaps should have been caught by the QA/QC protocol. As mentioned in Section 8.4.2.2, QA/QC processes could not identify that *kitchen/bath* or *interior paint/trim* tube caulking products were being incentivized at retail stores. They were also unable to identify that employees outside of EAL territory were being provided *weatherization* measures.

8.7 DETAILED PROCESS EVALUATION RESULTS

This section presents results from four data collection activities conducted to gather data on program processes. They include a downstream participant survey, a midstream participant survey, interviews with distributors, and interviews with retailers.

8.7.1 Downstream Participant Survey

As part of the PY2024 evaluation for the program, the EM&V team conducted 176 telephone surveys with residential customers who participated in the downstream portion of the program. This included the Marketplace, Mail-In Rebate, New Mover Kit, and Appliance Recycling components. The downstream participant survey focused on program awareness, experiences with the program, satisfaction, and demographics.

8.7.1.1 Respondent Characteristics

Overall, most downstream participants surveyed own their homes, *completed college or studies beyond college*, and have *incomes above the federal poverty line* (FPL). Their ages skew older as well; a quarter of respondents are *65 or older*, and one in five are *55 to 64*, with the remaining participants divided about evenly across age groups from *25 to 54*. On average, *households include about two people*, consistent across delivery channels.

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There are notable differences in delivery channels, although the smaller number of completed surveys warrants caution. About 80 percent of respondents *own their homes,* but this is true for only a bare majority (51 percent) of participants in the New Mover Kit delivery channel. These respondents are also noticeably younger; over 30 percent of New Mover Kit respondents are *under 35*. In contrast, over 70 percent of the Appliance Recycling delivery channel participants are *55 or older*, and slightly less than one-third of Marketplace participants are *65 or older*. These age and home ownership differences have parallels in education and income. Three-quarters or more of Mail-in Rebate and Marketplace participants have *completed college or graduate studies*, and almost all have incomes *above the FPL*. Roughly one-half, or slightly less, of Appliance Recycling and New Mover Kit participants reported *completing college or beyond*, and participants in these delivery channels are more likely to have incomes *below the FPL*. While most respondents had incomes *above the FPL*, roughly one in five participants in the Appliance Recycling and New Mover Kit delivery channels reported total household income in 2023 *below the FPL*.

Table 103. Point of Purchase Solutions—Participant Downstream Survey—Household and Respondent Characteristics

Characteristic		Appliance Recycling	Mail-In Rebates	Marketplace	New Mover Kit	Total mean/ percentage
Household characteristics						
Household size	Mean number of residents	2.2	2.2	2.5	2.2	2.3
	Respondents (n)	34	27	59	49	169
Own or rent	Own/buying	91.2%	100.0%	86.2%	51.0%	79.2%
	Rent/lease	8.8%	0.0%	13.8%	49.0%	20.8%
	Respondents (n)	**34**	**27**	**58**	**49**	**168**
Respondent characteristics						
Respondent age	18–24	0.0%	0.0%	0.0%	6.1%	1.8%
	25–34	11.8%	11.1%	11.9%	28.6%	16.6%
	35–44	8.8%	25.9%	22.0%	16.3%	18.3%
	45–54	5.9%	22.2%	18.6%	18.4%	16.6%
	55–64	32.4%	18.5%	15.3%	22.4%	21.3%
	65 or older	41.2%	22.2%	32.2%	8.2%	25.4%
	Respondents (n)	**34**	**27**	**59**	**49**	**169**

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Characteristic		Appliance Recycling	Mail-In Rebates	Marketplace	New Mover Kit	Total mean/ percentage
Respondent education	Less than high school	0.0%	0.0%	0.0%	0.0%	0.0%
	High school graduate	15.2%	7.4%	6.8%	10.2%	9.5%
	Vocational/technical school	15.2%	7.4%	5.1%	10.2%	8.9%
	Some college	15.2%	11.1%	13.6%	30.6%	18.5%
	Completed college	36.4%	33.3%	49.2%	18.4%	35.1%
	Graduate studies or advanced degree	18.2%	40.7%	25.4%	30.6%	28.0%
	Respondents (n)	**33**	**27**	**59**	**49**	**168**
2023 annual household income (relative to FPL and number of household members)	Less than FPL	22.6%	4.2%	1.8%	17.8%	11.0%
	Greater than FPL	77.4%	95.8%	98.2%	82.2%	89.0%
	Respondents (n)	**31**	**24**	**55**	**45**	**155**

Source: Downstream Participant Survey Question D0, D1, D2, D3, D4
Don't know and *refused* responses are excluded.

8.7.1.2 Program Awareness

Most respondents learn about the program from email (53 percent overall), with another 22 percent finding information from the *EAL website*. *Word-of-mouth* and *online sources other than the utility's website* are also common sources of program awareness and reflect the experience of one in ten respondents. The primacy of *email* and *online sources* best characterizes participants' experience in the Marketplace and New Mover Kit delivery channels. *Direct mail* plays a larger role in Appliance Recycling (18 percent), while sources of program awareness for Mail-in Rebate participants show the greatest variability. Among the latter group, *email*, *word-of-mouth*, and *other online sources* are each mentioned by 20 percent of respondents. Among the participants in the Mail-in Rebate delivery channel, *retail store* was the most common response, serving as the primary source of information for 26 percent of respondents.

Table 104. Point of Purchase Solutions—Source of Program Awareness

Source	Mail-In Rebates	Marketplace	Appliance Recycling	New Mover Kit	Total
Email	18.5%	68.9%	41.2%	60.0%	52.9%
EAL website	11.1%	19.7%	11.8%	38.0%	22.1%
Word of mouth	18.5%	11.5%	8.8%	8.0%	11.0%
Another online resource (not EAL's website)	18.5%	9.8%	14.7%	6.0%	11.0%
Mail	3.7%	1.6%	17.6%	6.0%	6.4%

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Source	Mail-In Rebates	Marketplace	Appliance Recycling	New Mover Kit	Total
EAL utility bill insert	0.0%	11.5%	2.9%	4.0%	5.8%
Retail store	25.9%	1.6%	2.9%	0.0%	5.2%
App	0.0%	0.0%	0.0%	8.0%	2.3%
EAL brochure	0.0%	3.3%	2.9%	0.0%	1.7%
Contractor or vendor	7.4%	0.0%	2.9%	0.0%	1.7%
Text	0.0%	1.6%	5.9%	0.0%	1.7%
EAL call center representative	3.7%	1.6%	0.0%	0.0%	1.2%
Prior participation in another EAL program	3.7%	1.6%	0.0%	0.0%	1.2%
Newspaper	0.0%	0.0%	5.9%	0.0%	1.2%
Other EAL staff	3.7%	0.0%	0.0%	0.0%	0.6%
Radio	0.0%	0.0%	2.9%	0.0%	0.6%
Television	0.0%	0.0%	2.9%	0.0%	0.6%
Other	0.0%	1.6%	0.0%	0.0%	0.6%
Respondents (n)	27	61	34	50	172

Source: Downstream Participant Survey Question A1.
Don't know and *refused* responses are excluded.

Email was also the preferred source of program awareness, mentioned by 81 percent of respondents and was the preferred source by most respondents across all the delivery channels. Participants in the Mail-In Rebate delivery channel showed the most varied array of preferences: While a majority (64 percent) preferred *email*, *mail*, *utility bill inserts*, and *brochures* were each preferred by at least 20 percent of respondents. All preferred sources are listed in the table below.

Table 105. Point of Purchase Solutions—Preferred Source of Program Awareness

Source	Appliance Recycling	Mail-In Rebates	Marketplace	New Mover Kit	Total
Email	73.0%	64.0%	82.3%	93.8%	80.8%
Mail	10.8%	20.0%	8.1%	10.4%	11.0%
Text	5.4%	12.0%	8.1%	6.3%	7.6%
EAL utility bill insert	2.7%	24.0%	8.1%	0.0%	7.0%
EAL brochure	5.4%	20.0%	4.8%	0.0%	5.8%
EAL website	2.7%	4.0%	6.5%	4.2%	4.7%
App	0.0%	0.0%	3.2%	4.2%	2.3%
Newspaper	5.4%	0.0%	0.0%	0.0%	1.2%
Other	0.0%	0.0%	1.6%	2.1%	1.2%
Another online resource (not EAL's website)	2.7%	0.0%	0.0%	0.0%	0.6%

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Source	Appliance Recycling	Mail-In Rebates	Marketplace	New Mover Kit	Total
EAL call center representative	2.7%	0.0%	0.0%	0.0%	0.6%
Respondents	**37**	**25**	**62**	**48**	**172**

Source: Downstream Participant Survey Question A2.
Don't know and *refused* responses are excluded.

8.7.1.3 Appliance Recycling

Before recycling their appliance, just over one-half of respondents (19 respondents) were using their unit as their *primary* appliance (51 percent), 38 percent (14 respondents) said it was their *secondary* unit, and 11 percent (4 respondents) said the unit was *not being used*. For those respondents who said they were using the appliance as a *secondary* unit, almost all (85 percent, 11 respondents) said the appliance was *used all the time*, while 2 respondents said it was only *used some of the time*. As far as the condition of the appliance, most either *worked and were in good condition* or *worked but needed minor repair* (39 percent, 14 respondents each). Six respondents said the *unit worked but needed major repair*.

While three respondents said they *would have kept the appliance* if EAL's program was not available, most respondents (91 percent, 30 respondents) *would have removed it*. One-half of these respondents (15 respondents) said they *would have hauled it away on their own* (seven to a recycling center, three to a dump). Of the six respondents who *would have given the appliance away*, two said they would *give it to a charitable organization*, two would *give it to someone they know*, and one would *give it to someone they do not know*. Other methods of how respondents would have removed their old appliances are included in the table below.

Table 106. Point of Purchase Solutions—Method Would Have Used to Remove Old Appliance

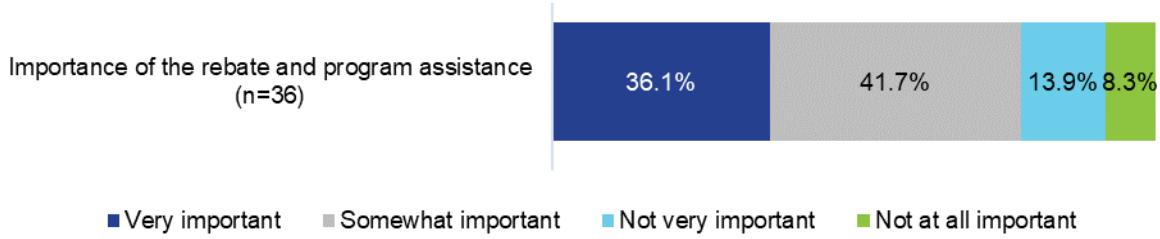
Method	Respondents (n)	Percentage
Hauled it away on my own	15	50.0%
Given it away	6	20.0%
Had it removed by the dealer you got your replacement from	5	16.7%
Sold it	1	3.3%
Hired someone else to haul it away	2	6.7%
City of Hot Springs would have come to remove it	1	3.3%
Total	**30**	**100.0%**

Source: Downstream Participant Survey Question AP5
Don't know and *refused* responses are excluded.

The program was important for most respondents in helping them recycle their old appliances. About 78 percent of respondents said the program was *very important* or *somewhat important* in their decision to recycle their old appliances (36 percent and 42 percent, respectively); three respondents said the program rebate or assistance was *not at all important* in their recycling the appliance.

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Figure 20. Point of Purchase Solutions—Importance of the Program Rebate and Assistance in Recycling Appliance



Source: Downstream Participant Survey Question AP9
Don't know and *refused* responses are excluded.

Seventy-eight percent of respondents replaced their old appliances. Most (86 percent or 24 respondents) said they *replaced the old appliance with a new energy-efficient unit*, three respondents *replaced their old unit with a used appliance*, and one respondent *replaced their old unit with a new, non-energy-efficient model*.

8.7.1.4 Energy Efficiency Kits

New customers who requested an energy efficiency kit received *door or window rope caulk*, an *APS*, and a *self-adhesive silicone rubber V-shaped sealer*. Of the equipment received, respondents were most likely to use the *APS* (92 percent). In contrast, the two *weatherization* measures—*door/window rope caulk* (45 percent) and *self-adhesive silicone rubber V-shaped sealer* (28 percent)—were installed much less frequently. The *APS* installation rates were similar among homeowners and renters; however, the *caulk* and *sealer* installation rates were 10 to 15 percent lower among renters. The overall installation rates are reported in the table below.

Table 107. Point of Purchase Solutions—Kit Equipment Installation

Equipment	Yes	No	Respondents (n)
Door or window rope caulk	44.9%	55.1%	49
Advanced power strip	91.8%	8.2%	49
Self-adhesive silicone rubber V-shape sealer	28.2%	71.8%	39

Source: Downstream Participant Survey Question K1.
Don't know and *refused* responses are excluded.

Most of the installed equipment remains installed or is still in use. Ninety-one percent of the *APSs* are still in use, and 90 percent of the *caulk* and *sealers* remain installed. Just over one-half of the *caulk* and *sealers* were *used in full* (53 and 56 percent, respectively). For equipment that was not in use, the primary reason was that the *equipment was not needed and, therefore, put in storage* (25 percent to 54 percent); this was more common among the *sealer* and *rope* caulk items. Another common reason was that the respondents *had not gotten around to installing it* (13 to 25 percent). Two of the four respondents who did not install the *APSs* indicated they *did not know how to install it*; two respondents reported the same about the *rope caulk,* and three about the *V-shape sealer*.

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Table 108. Point of Purchase Solutions—Reason for not Using the Kit Item

Reason	Door or window rope caulk	Advanced power strip	Self-adhesive silicone rubber V-shape sealer
Did not need/storage	40.0%	25.0%	54.2%
Haven't gotten around to it	20.0%	25.0%	12.5%
Don’t know how to use	8.0%	50.0%	12.5%
New home/renovating	12.0%	0.0%	0.0%
Other	8.0%	0.0%	16.7%
Gave away	4.0%	0.0%	4.2%
Apartment	4.0%	0.0%	0.0%
Kept coming off	4.0%	0.0%	0.0%
Respondents (n)	**25**	**4**	**24**

Source: Downstream Participant Survey Question K3.
Don't know and *refused* responses are excluded.

Five respondents said the equipment was no longer installed or in use. The most common reason for no longer using the kit item was that it *no longer worked* (4 respondents). Three respondents said the equipment *no longer worked,* as mentioned by all three *APS* respondents. For the equipment that was not used, 56 to 67 percent of respondents *plan to use the equipment*, which was more common for the *APSs* and least common for the *sealer*.

8.7.1.5 Advanced Power Strips

Of the 50 respondents who received an *APS* through the POPS program, 42 have *used the device in their home*. Of the 42 respondents who have used the *APS*, 86 percent have *more than one piece of equipment* plugged into their *APS*. *Televisions* are the most common equipment plugged into the *APS* (48 percent), followed by *computer equipment*, including *computers* and *computer monitors* (41 percent and 24 percent, respectively). *Chargers* and *lights* were also commonly installed equipment (26 and 24 percent, respectively).

Table 109. Point of Purchase Solutions—Equipment Plugged into the Advanced Power Strips

Equipment	Total
TV	47.6%
Computer	40.5%
Charger	26.2%
Computer monitor	23.8%
Lights	23.8%
Printer/scanner	11.9%
Other	11.9%
Fan	9.5%
Cable box/satellite system	7.1%

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Equipment	Total
Gaming system	7.1%
Sound system	7.1%
DVD / VHS player	7.1%
Speaker	7.1%
Router	4.8%
Heater	4.8%
Appliance	4.8%
Modem	2.4%
Respondents	**42**

Source: Downstream Participant Survey Question APS1
Responses of *don't know* and *refused* have been excluded.
Multiple responses were allowed.

APSs have three outlets: a control, always on, and a switched outlet. The *APS* saves energy when the combination of control and switched outlets are used in tandem. To help gauge how the *APSs* were being used, the evaluation team asked respondents about the equipment they had installed in which outlet. As shown in Table 110 below, only 14 of the 49 respondents surveyed who were sure of their *APS* status appear to be using the *APS* in a manner that can save energy, with nine respondents indicating they *have something plugged into each* of the three outlets, and another five *have something plugged into the control and switched outlets*.

Table 110. Point of Purchase Solutions—Advanced Power Strip Outlet Use

Outlets utilized	Number of respondents	Potential energy savings
Have not used the APS	5	No
Tried, but it did not work	2	No
Only one item was plugged into the outlets	6	No
Only control and always on used	20	No
Only always on and switched used	2	No
Only control and switched used	5	Yes
All three outlets used	9	Yes
Respondents	**49**	
Respondents potentially saving energy	**14**	

Source: Downstream Participant Survey Question APS2. One respondent who *did not know* if they had used the *APS* was excluded from this analysis.

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When looking at the *home entertainment* application, while 20 televisions were plugged into the *APS*, only 11 participants reported *plugging the TV into the control switch*. Of those 11 participants that had the TV in the control switch, there was one participant with a *gaming system in the switched outlet*, one participant that had *lights in the switched outlet*, one participant with a *Roku in the switched outlet*, one participant with a *Google Home device* in the switched outlet, and one participant with *a fan and phone charger* in the switched outlet. These appliances appear to differ significantly from those assumed in the deemed TRM 9.2 methodology. As shown in Table 111, only 3 of the 10 respondents who reported the outlet locations of *home entertainment appliances* properly were found to be potentially saving energy.

Table 111. Point of Purchase Solutions—Advanced Power Strip Outlet Usage for Respondents Using in Home Entertainment System

Control outlet	Switched outlet	Always on outlet	Potential energy savings	Comment
TV	Roku	None	Yes	
TV	None	Speakers	No	
None	Recliner	TV	No	Switched plug load will not turn on
TV	None	Christmas tree	No	
TV	None	None	No	
None	None	Computer and TV	No	
TV	Unspecified	No	Yes	
Phone charger	None	TV	No	
TV	Gaming system	Cable box	Yes	
None	None	TV and fan	No	
Respondents				**10**
Respondents potentially saving energy				**3**

Source: Downstream Participant Survey Question APS2. Three responses of ***don't know,*** three responses of *more than one plug load in the control outlet*, and four responses of *inconsistent plug loads* between Question APS1 and APS2 have been excluded.

When looking at the *home office* application, while 17 computers were plugged into the *APS*, only six participants reported *plugging the computer into the control switch*. Of those six participants that had the computer in the control switch, there were three participants with *computer monitors* in the switched outlet, two with *printers* in the switched outlet, and one with *another computer* in the switched outlet. As shown in Table 112, only one of the five respondents who reported the outlet locations of *home office* appliances properly were found to be potentially saving energy.

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Table 112. Point of Purchase Solutions—Advanced Power Strip Outlet Usage for Respondents Using in Home Office

Control outlet	Switched outlet	Always on outlet	Potential energy savings
None	None	Computer	No
Computer	Computer monitor and printer	Phone chargers	Yes
None	None	Computer and TV	No
None	None	Computer and computer monitor	No
Computer	None	Phone chargers	No
Respondents			**5**
Respondents potentially saving energy			**1**

Source: Downstream Participant Survey Question APS2. Four responses of *don't know*, four responses of more than one plug load in the control outlet, and four responses of inconsistent plug loads between Question APS1 and APS2 have been excluded.

The participant survey results indicated that most residential customers who received *APSs* were not setting them up correctly to save energy. Customers were primarily using the *APS* as a regular power strip. It is recommended that ISRs be updated for *APSs* incentivized through the POPS program in future years to reflect how customers are installing them. The implementer should also provide additional training or instructions to ensure these incentivized devices deliver the expected energy savings.

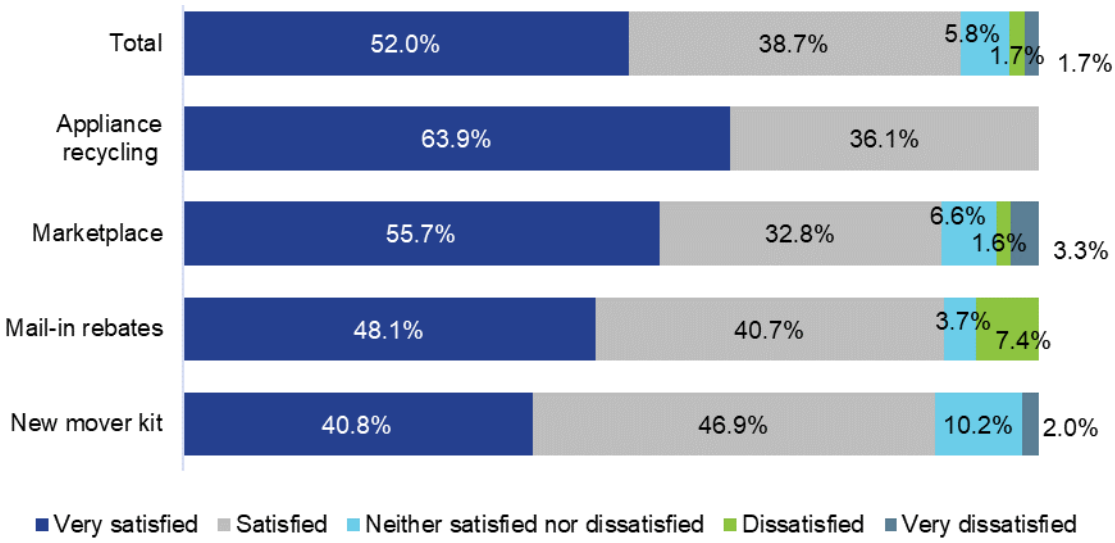
8.7.1.6 Satisfaction

Overall, satisfaction with the program is high. Over one-half of the respondents were *very satisfied* with the program, and another 39 percent were *satisfied*. Satisfaction was highest among participants in the Appliance Recycling delivery channel, where all respondents were either *very satisfied* or *satisfied* (64 percent and 36 percent, respectively).[56] Although almost one-half of the participants in the Mail-In Rebate delivery channel were *very satisfied* (48 percent), this delivery channel also exhibited the highest dissatisfaction rates (7 percent). Customers receiving new mover kits showed the greatest share of indecision: One in ten were *neither satisfied nor dissatisfied*. Figure 21 provides full satisfaction results.

[56] Response options included *very satisfied*, *satisfied*, *neither satisfied nor dissatisfied*, *dissatisfied*, and *very dissatisfied*.

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Figure 21. Point of Purchase Solutions—Satisfaction with the Program by Delivery Channel



Source: Downstream Participant Survey Question SAT3
Responses of *don't know* and *refused* have been excluded.

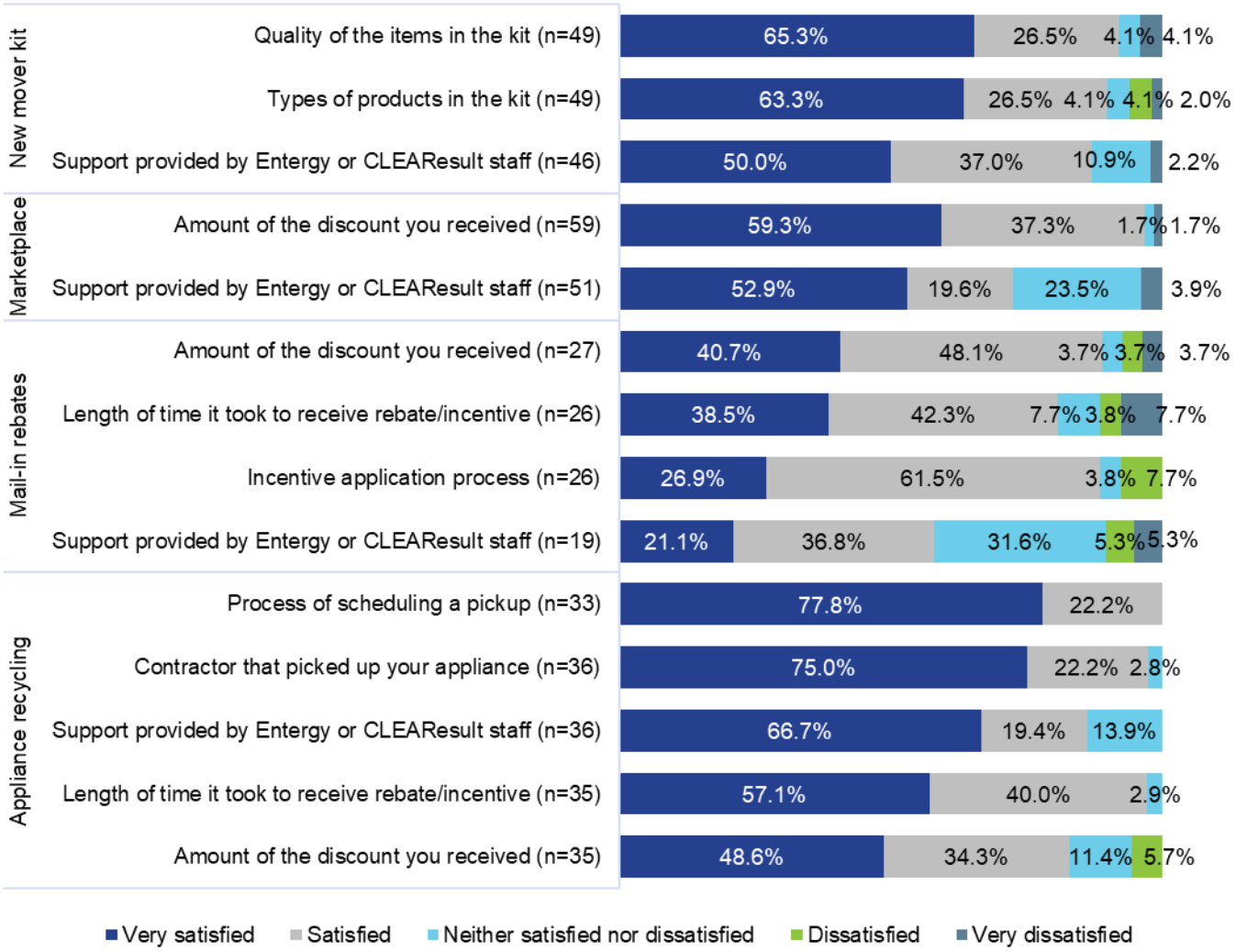
Figure 22 presents data on satisfaction with specific aspects of program delivery by delivery channel. The figure readily reveals the high satisfaction among participants in the Appliance Recycling component (bottom panel of horizontal bars) compared to other delivery channels. For four of the five program aspects, a majority are *very satisfied*, ranging from 57 percent to 78 percent. *Interacting with contractors and support staff* and *scheduling the pick-up* were rated the highest. The two aspects of the program where the share of *very satisfied* customers was lower were related to *the time it took to receive the rebate or the rebate amount.*

A similar pattern holds for the New Mover Kit and Marketplace delivery channels. Most of these participants also report being *very satisfied* with support staff (50 and 53 percent), and more than 60 percent of New Mover Kit recipients were *very satisfied* with the quality and type of products they received. In contrast to relatively lower rates of satisfaction with the rebate among those who recycled appliances, 59 percent of customers who purchased equipment from the online Marketplace were *very satisfied* with the amount of the price discount.

While fewest in number (n=27), the surveyed participants in the Mail-In Rebate component expressed the weakest satisfaction—a visibly apparent pattern in Figure 22. Compared to the other delivery channels, where a majority were *very satisfied*, Mail-In Rebate participants were often *satisfied* with the discount, the time to receive a rebate, and the application process. Eight and 11 percent were *dissatisfied* or *very dissatisfied* with the incentive application process and the time to receive a rebate, respectively. *Support from Entergy or CLEAResult staff* was the greatest source of indecision; almost one-third were *neither satisfied nor dissatisfied*. Some of these results may stem from program design. The Mail-In Rebate component likely involves little interaction with program support staff, so customers express lukewarm reactions. Satisfaction with rebate amounts might interact with timeliness or the application process; a rebate may seem less worthwhile relative to the effort (a complicated application form) or the fact it was a long time coming. In contrast, Marketplace participants—who express high satisfaction with the price discount—immediately reap the financial benefit of a lower price.

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Figure 22. Point of Purchase Solutions—Aspect Satisfaction by Delivery Channel

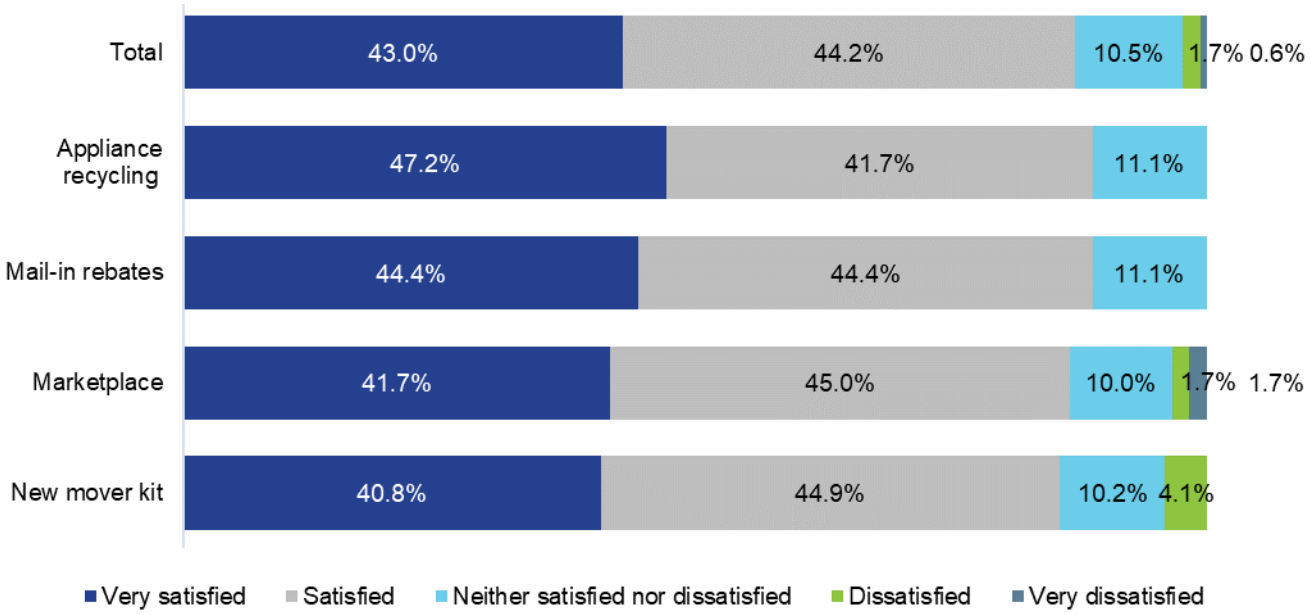


Source: Downstream Participant Survey Question SAT1.
Responses of *don't know* and *refused* have been excluded.

Satisfaction with EAL as an energy provider was high and consistent across delivery channels. Over 85 percent are *satisfied* or *very satisfied* with EAL. Four respondents deviated from this pattern; three were *dissatisfied,* and one was *very dissatisfied*. Responses by delivery channel are shown in the figure below.

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Figure 23. Point of Purchase Solutions—Satisfaction with Entergy as an Energy Service Provider



Source: Downstream Participant Survey Question SAT5
Responses of *don't know* and *refused* have been excluded.

All but four respondents said they would recommend the program to others. The four who would not recommend the program shared the following reasons.

> *"I just felt like the price was more than what I wanted to pay and thought the unit was going to be bigger."* (Marketplace)
>
> *"Because they do not stand behind the equipment they install."* (Marketplace)
>
> *"I would not go out of the way to tell anyone."* (Mail-In Rebates)
>
> *"If their experience is the same as mine, then no. I spent time trying to coordinate with this kit and never got one. Waste of time and energy for me.)* (New Mover Kit)

8.7.2 Midstream Participant Survey

As part of the PY2024 evaluation, the EM&V team conducted 45 telephone surveys with nonresidential customers who participated in the midstream portion of the program. The survey gathered data on program awareness, customer satisfaction, and organizational characteristics.

8.7.2.1 Characteristics of Responding Organizations

The customers who were surveyed represent a mix of business types. Most often, firms were in the *service sector* providing professional services or retail/personal services (19 percent each). *Warehouses and religious organizations* (16 percent and 12 percent, respectively) were also mentioned frequently. Most organizations *own their facility* (86 percent), and *decisions are made locally* (93 percent). Most customers are small businesses; almost half have *fewer than six employees* (46 percent, 18 of 39 respondents), and almost two-thirds have *fewer than eleven employees* (64 percent, 25 of 39 respondents).

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Table 113. Point of Purchase Solutions—Midstream Survey Respondent Characteristics

Respondent characteristic		Mean/ percentage
Type of business	Professional services	18.6%
	Retail/personal services	18.6%
	Warehouse	16.3%
	Religious	11.6%
	Lodging	7.0%
	Auto repair shop	4.7%
	Manufacturing –1 or 2 shifts	4.7%
	Office	4.7%
	Other	4.7%
	Educational	2.3%
	Medical—hospital	2.3%
	Medical—office/clinic	2.3%
	Restaurant	2.3%
	Respondents (n)	**43**
Own or rent	Own	86.0%
	Rent/lease	14.0%
	Own some and rent/lease some	0.0%
	Respondents (n)	**43**
Number of full-time employees	0 employees	15.4%
	1-5 employees	30.8%
	6-10 employees	17.9%
	11-50 employees	28.2%
	More than 50 employees	7.7%
	Minimum	0
	Maximum	325
	Average	27
	Respondents (n)	**39**

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Respondent characteristic		Mean/ percentage
Number of part-time employees	0 employees	47.4%
	1-5 employees	28.9%
	6-10 employees	15.8%
	11-50 employees	5.3%
	More than 50 employees	2.6%
	Minimum	0
	Maximum	100
	Average	6
	Respondents (n)	**38**
Level budget decisions are made	Locally	92.7%
	Regionally	7.3%
	Nationally	0.0%
	Worldwide	0.0%
	Respondents (n)	**41**

Source: Midstream Participant Survey Question E1, E2, E3, E4
Don't know and *refused* responses are excluded.

Most organizations (92 percent) *do not have any payback period or return on investment* (ROI) requirements. Among the three respondents (eight percent) who have requirements, responses varied and included the following:

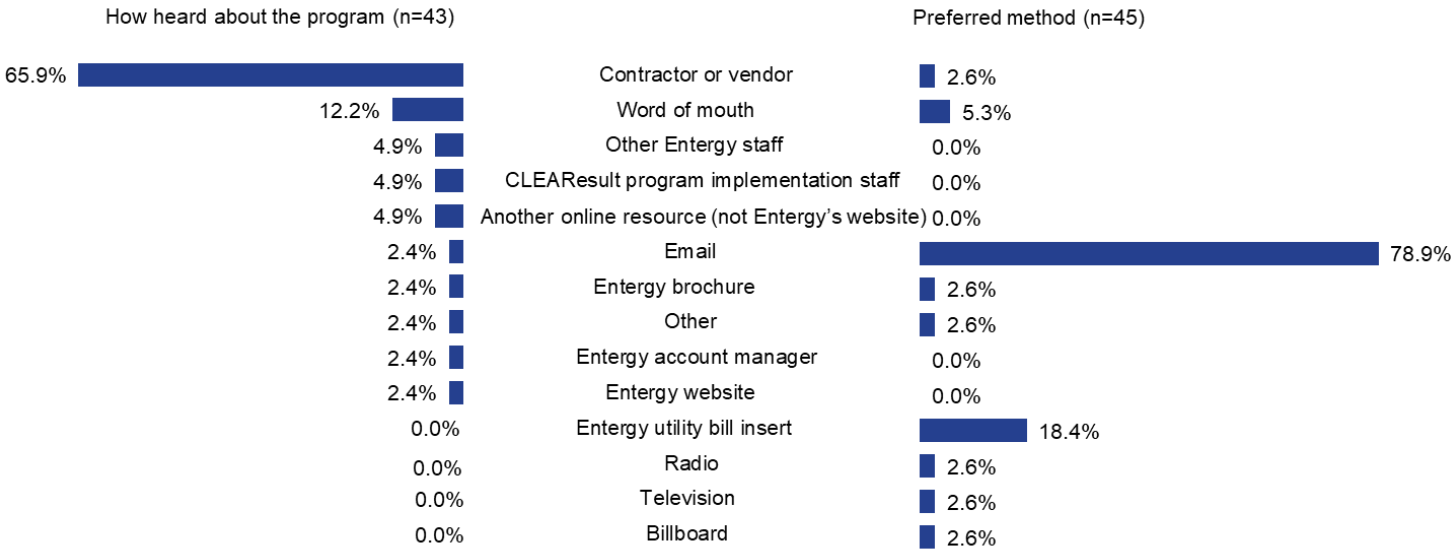
- "3−5 years."
- "We typically look at the ROI in a year."
- "We look at the property to see how long the lighting will be on and the occupancy."

8.7.2.2 Program Awareness

The *contractor or vendor* was the most common source of program awareness. About one-third of respondents learned about the discount from their *contactor* or *vendor*, followed by *word of mouth* (12 percent). Most respondents would prefer to learn about program offerings by *email* (79 percent). *EAL utility bill inserts* were the only other method preferred by a noticeable share of customers (18 percent); *word of mouth* was a distant third, mentioned by 5 percent. The figure below shows all the sources of program awareness and preferred methods.

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Figure 24. Point of Purchase Solutions—Actual and Preferred Source of Program Awareness



Source: Midstream Participant Survey Question A1, A2.
Don't know and *refused* responses are excluded.

Almost all respondents (91 percent) knew that EAL was responsible for providing the discount for the lighting equipment. However, when asked if they were aware Entergy offered more energy efficiency programs to C&I customers, fewer customers were aware. Less than one-half (47 percent) *knew other C&I program offerings*, about 45 percent of respondents were *aware of both the discount and other C&I programs*, and the other 45 percent were *aware of the discount but not the C&I programs.* Three respondents (7 percent) were *not aware of either Entergy's discount or C&I programs*.

Table 114. Point of Purchase Solutions—Awareness of Entergy's Discount and C&I Programs

		Aware of Entergy's C&I programs		
		Yes	No	Total
Aware the discount was from Entergy	Yes	45.2%	45.2%	90.5%
	No	2.4%	7.1%	9.5%
	Respondents (n)	**20**	**22**	**42**

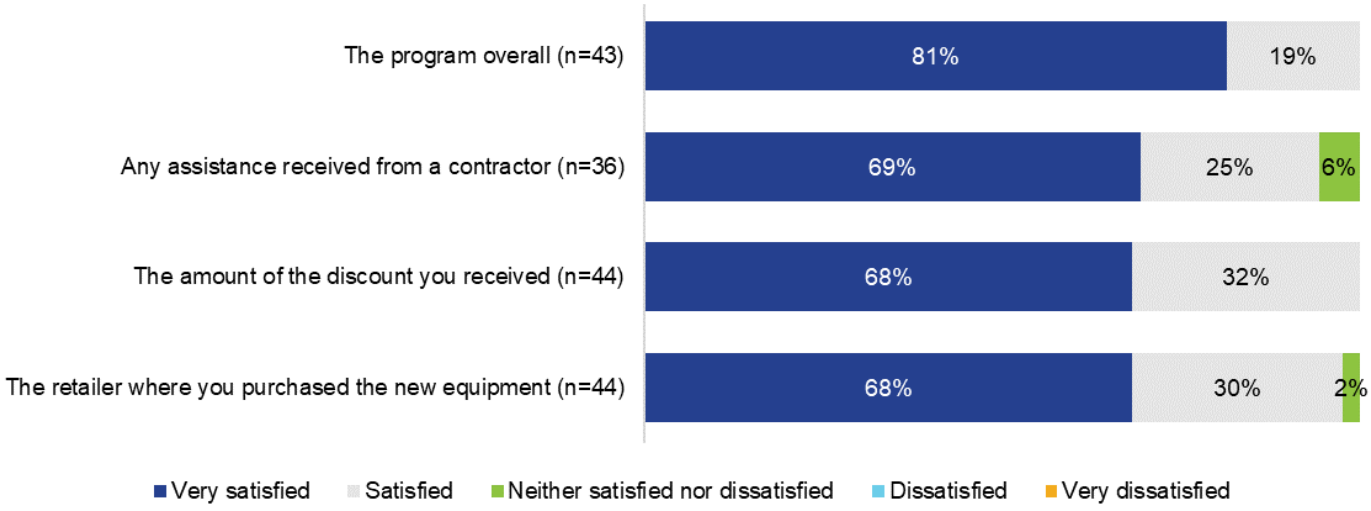
Source: Midstream Participant Survey Question I1a, A4.

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8.7.2.3 Program Satisfaction

Satisfaction with the program and program aspects was high. All respondents rated their overall satisfaction with the program high, either being *very satisfied* or *satisfied*, using the categories *very satisfied*, *satisfied, neither satisfied nor dissatisfied, dissatisfied,* and *very dissatisfied.* No respondents reported dissatisfaction with the program or any of its elements. Along with the high satisfaction, all respondents said they *would recommend the program to others*.

Figure 25. Point of Purchase Solutions—Satisfaction with the Midstream Offering and Program Aspects



Source: Midstream Participant Survey Question SAT1, SAT3.

Only two respondents felt EAL could do something to improve their satisfaction; both respondents mentioned *better discounts*, with one also mentioning the *need for more resources and manpower for rural communities*. In addition, only one respondent reported any problems while participating; this respondent mentioned they did not get all their equipment at once, so there was a *delay in putting in the last of the equipment*.

8.7.2.4 Purchases and Decision-Making

Cost was the most important factor in the respondent's decision to make energy-saving improvements through the program. Two-thirds of respondents said *cost* was important, citing either the *upfront cost* or the *cost savings* for installing efficient equipment. About one-half (47 percent) reported that *lighting* equipment features were important factors in their decision-making. Important *lighting* features included brightness, efficiency, style, and the fact that it was a better product. Four respondents (nine percent) specifically said the *discount* or *lower* price *offered through the program* was important, and another four respondents said it was because the *equipment was needed*. Other responses are noted in the table below.

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Table 115. Point of Purchase Solutions—Factors Important in Making Improvement Through the Program

Response	Percentage
Cost	65.1%
Lighting features	46.5%
Efficiency	27.9%
Discount	9.3%
Equipment was needed	9.3%
Simplicity of the program	2.3%
Location within the building	2.3%
Respondents (n)	**43**

Source: Midstream Participant Survey Question FR1.

Most responding organizations (80 percent) approach energy-saving improvement without notable concerns. However, about one in five customers who were interviewed experience challenges, which they described as ranging from budgets to building age. The specific responses of these eight respondents included the following:

> *"Cost and downtime are the number one things to consider."*
>
> *"We are a non-profit, rural community with no tax income to service the community part. We rely on donations and volunteers."*
>
> *"The electricity is way too high in the summer."*
>
> *"A lot of our buildings have been purchased and not a new build. These are not the only ones or location."*
>
> *"We have a 112-year old building."*
>
> *"Financial challenges."*
>
> *"Budget wise, yes. We have to pick and choose which projects, and the amount of lighting involved."*
>
> *"We have an old building, built in 1931."*

8.7.3 Market Actor Interviews

We interviewed participating midstream distributors and upstream retailers to inform the process evaluation and support NTG analysis. The interviews explored (1) sales and stocking of program-eligible equipment, (2) program interactions and marketing, (3) program processes, and (4) program satisfaction and suggestions for improvements.

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8.7.3.1 Distributor Characterization

Between January 2023 and June 2024, 19 distributors participated in the commercial midstream program; the EM&V team completed in-depth interviews with 6 of them. The six distributors represented a mix, including some very active and others who did only a few projects. Four of the six distributors interviewed by the EM&V team provide electrical services. One of these distributors is an electrical distributor that makes program-eligible sales and then hires contractors to complete projects. The other two distributors provide lighting services, one of which provides only LED lighting and primarily (90 percent) for incentive-based customers.

Most distributors (five of six) have been trade allies with EAL for at least six years, one distributor has been a trade ally for over 20 years, and two distributors have worked with Entergy for eight years. In addition to participating in POPS, four of the six distributors interviewed also participate in the Large Commercial and Industrial Solutions program.

8.7.3.2 Stocking and Sales Trends

The design of the POPS program could enhance energy savings by influencing sales of program-eligible products and stocking practices. The EM&V team spoke with distributors about both topics and gathered their expectations for the next 12 months. We summarize their responses about each topic in turn.

*The Impact of POPS on Stocking Program-Eligible Equipment***.** The EM&V team's interviews suggest the program has minimally affected stocking practices. Five of the six distributors interviewed provided information on their stocking practices. Of these, only two distributors *have seen impacts* on their stocking practices since joining the program; one of the distributors has *increased their stocking* of all program-qualified equipment, and the other distributor stated they now *stock two types of fixtures instead of ten* because the new lighting technology is more streamlined. The shift to more streamlined stocking has helped them immensely.

Three of the five distributors who reported about stocking practices reported *no change* in their stocking of program-qualified equipment since enrolling in the POPS program. One distributor was *already stocking only program-approved equipment*, and another said *the program has not impacted their stocking practices*, especially over the last year. The third distributor explained that they had only been participating in the POPS program for a year, and nothing had changed during that period.

Sales Trends and the Impact of POPS on Sales of Program-Eligible Equipment. All six distributors were able to provide information on their sales trends. However, they had difficulty answering questions regarding sales percentages and breakdowns. For example, most distributors struggled to quantify the percentage of their overall lighting sales in the last 12 months from program-eligible products. One distributor said *40 percent* of their in-store sales were from program-eligible products, another distributor said that about *five percent* of their sales were from program-eligible products, and a third distributor was unsure about sales but reported that *90 percent* of their stock was program-eligible.

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Nonetheless, the interviews with distributors suggested the POPS program had a more notable impact on their sales than on the stocking practices discussed above. Four of the six distributors reported that their sales of program-eligible lighting *would have been lower* if the program had not offered discounts. According to one distributor, his company would drastically suffer, and he would have to lay off at least 60 percent of his staff if the POPS program incentives were eliminated. Another distributor described a similarly dramatic impact; they would stock the same products without the program but would have to find a completely different approach for their sales tactics. Of the distributors that said their sales of program-eligible lighting would have been lower absent the program's discounts, the decrease in sales ranged from 5−20 percent.

Two of the six distributors said their sales of program-eligible lighting *would have been the same* without the program's incentives and discounts. One of these distributors was an electrical distributor with a lighting team within the company. Not all the items they sell are program-eligible; however, *90 percent* of their lighting was eligible. Most of their customers were already planning to pursue the lighting project before they explained the program to them, but the discounts were an added benefit.

Expectations about Future Sales. Looking at the next 12 months, two distributors believe their sales of eligible lighting equipment *will stay the same*. One of the distributors strongly believes that their sales will decrease; they believe that current laws requiring the use of certain bulbs have led to the elimination of some of the rebates and incentives. On the retail side, this distributor has already seen his sales drop "*hundreds of percentages,*" and they believe this will continue over the next 12 months.

8.7.3.3 Program Communication and Marketing

Distributors were also asked about their communication with POPS program representatives and their marketing practices. Three of the six distributors commented on their communication with CLEAResult. All three of these distributors stated that they had positive interactions. They felt that their questions were answered completely and in a timely manner. One of these three distributors mentioned how much they appreciated CLEAResult helping them with additional training.

> *"Whenever I have said, hey I need a tutorial, they have come down to my store and done a side-by-side tutorial for me*."

Only one of the distributors stated that they had any challenges with CLEAResult. One of their challenges was *getting pushback on suggestions or requests regarding the program*. However, the distributor stated that they understood this was something outside of CLEAResult's control and acknowledged that the requests were *wants*, not *needs*. This distributor also discussed his frustration with having to set up an appointment to meet with someone from CLEAResult in person; they were unhappy that they could not just stop by the office.

One-half of the distributors we interviewed do not actively market the program to customers. Instead, most of their advertising is done by *word of mouth* when a customer requests an eligible product. They do not hang signs in their stores, advertise the program on their website, or go out of their way to market it to their community.

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The other three distributors actively market the program in various ways. One of the distributors uses the *materials they received from CLEAResult* to promote the program. Another distributor *markets the program on social media*, such as Facebook postings that explain the rebates available and in-store sales events. The social media posts do not brand the advertising with Entergy or CLEAResult logos. The third distributor considers themselves as educators more than salespeople to their customers; they market the program to their customers through *in-depth discussions* during which they explain products available through the program, the impact of participating, and how to increase energy efficiency.

8.7.3.4 Process of Participation

Distributors were asked about their experience with the participation process. One distributor said the process was easy for them, especially since they have been doing it for so long. They stated that "*it has become second nature for [them]*." Another distributor explained that they prefer the POPS program over the Large Commercial and Industrial Solutions program for their larger projects because the paperwork and process are more straightforward.

Only one distributor reported having any issues with the participation process. The issue was not with the initial application to participate, which they found easy to read and understand; rather, they found it *hard for larger businesses with multiple locations to handle all that goes into participating in the program*. Because of the issues for larger businesses with various locations, their company focuses on businesses with one location, like a church or an airport.

8.7.3.5 Program Satisfaction and Recommendations

Distributors reported high satisfaction with the program overall. All six distributors were asked to rate their satisfaction as *very satisfied*, *satisfied*, *neither satisfied nor dissatisfied*, dis*satisfied*, or *very dissatisfied*. Two distributors stated that they were *very satisfied* with the program overall. One of these distributors commented, "*The program seems to be well-funded and helping a lot of customers.*" This same distributor also mentioned that they appreciate that EAL offers an incentive for mission-based 501(c)(3) non-profit organizations. This helped a lot of organizations that would not have been able to afford their lighting projects.

The remaining four distributors said they were *satisfied* with the program overall. Of the distributors that said they were *satisfied* with the program, two distributors explained why they could not say they were *very satisfied*. One distributor wished Entergy would bring back the residential side of the program. The other distributor said they felt Entergy could do more to help distributors with the program. Specifically, they mentioned more in-person training and education for their staff. They are unable to participate in online webinars or trainings because their staff are generally working in the field. When staff are stationed at computers, their corporate system blocks links or meetings not done through their company.

One distributor discussed issues that were not directly related to the program but were instead related to supply and demand. For a project to qualify for the program, distributors must use specific qualified products. His company has issues obtaining those products, so it sometimes has to use several separate manufacturers to get the necessary products.

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A few of the distributors provided recommendations for the program. One recommendation was to *bring back the residential side of the program*. The distributor who made this recommendation talked about how much they liked the commercial and residential programs throughout their interview. They explained that the residential side of the program helped bring in customers who otherwise would have gone to big box stores like Lowes for their lighting needs.

It was also suggested the program *add a rebate for A19 bulbs* because they are the most common bulbs. The distributor who suggested this believes that they could sell more of these bulbs to customers if there were a rebate, specifically to furniture stores that go through many of these light bulbs with the sale of lamps.

Adding a rebate for sensor switches was also recommended. One distributor found that after customers install LEDs, they tend not to worry about turning their lights off because the bulbs are so energy efficient, leading to lights being left on continuously for long periods. If the program had a rebate for sensor switches, this distributor believes they could sell them to their customers along with LEDs to prevent this issue.

8.7.3.6 Retailer Characterization

We received feedback from seven stores or organizations regarding their participation in the upstream portion of the program. This included three local stores that participated in the program, three suppliers to the retail stores, and one corporate contact for local retail stores. The retailers we talked with were able to provide feedback on the retail portion of the program as well as the event portion of the program, where products are given away at community events.

Most retailers have been with EAL for at least four years. All three suppliers mentioned working with utility programs in other jurisdictions.

8.7.3.7 Stocking and Sales Trends

The three local stores were only able to provide limited information on the program. All three indicated that decisions were made at a corporate level and had limited knowledge about the program. When asked how the program impacted their sales, five retailers said their sales *would have been lower* without the program. One retailer said they *would have sold some but not a lot*, and another said the retail store they work with *would not sell the equipment if the program did not exist*. One respondent believed their sales would have been 15−20 percent less, while another felt their sales would have been 8−10 percent less. The last respondent could not quantify the impact but said it would differ based on the equipment. Their statement was as follows:

> *"It depends on the products, but something like a water heater with a large incentive would definitely have lower sales on the unit if the incentive was not in place. Some of the incentives like $25 off a $200 - $300 dehumidifier have not seen the same result. Twenty percent or more incentives is where we have seen the most impact."*

The three suppliers mentioned stocking more program-eligible products depending on what is incentivized during the program year. As the program changes, its stock changes, along with the program's ability to supply the necessary equipment. Almost all the equipment was also incentivized by other utility programs, so their stocking practices reflect the influence of multiple utilities.

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8.7.3.8 Program Communication and Marketing

Like distributors, retailers were also asked about their communication with POPS program representatives and their marketing practices. Five of the seven retailers commented on their communication with CLEAResult. One said they were *unaware of who CLEAResult was*, and a second only commented that they had *interacted with CLEAResult in the past year* without providing details. The remaining three have all had positive interactions. The three with positive interactions were the suppliers, who all mentioned *having worked with CLEAResult for years and having built a strong relationship*. Two local stores indicated they had not received any signage for their store, while the third said there was signage about special pricing offered by Entergy. The one corporate office also mentioned they received program-provided signage and display information. Two suppliers mentioned receiving signage from EAL and working with them for different events.

Only one of the retailers stated that they had any challenges with CLEAResult. One of the challenges they had was the *lack of communication*. They have been part of the program for years, so they understand the program, but they would appreciate an annual update on the focus of the program. The update could spotlight new items added to the program (or confirm no new items were added), explain any program requirements or delivery changes compared to the prior program year, and provide an overview of how the industry has shifted or other macro trends that establish context.

In talking with customers at events, one respondent said customers *"typically are not thinking about it or know about the energy savings."* They purchase the product when they find out about the discount because it is a good deal. In addition, the education at the events is beneficial because the newer products, such as an APS, need to be explained. Face-to-face interaction is helpful for these types of products.

Only one respondent provided feedback on the factors customers typically consider when shopping for energy-using equipment. This respondent had the following to say:

> *"Price point is a big one we see that persuades the customers to buy certain products. A lot of customers are still not educated on the saving[s] that an energy-efficient product can provide over time and they are looking to save money at purchase rather than long term."*

8.7.3.9 Process of Participation

Retailers talked about their experiences with the program, none of which experienced difficulty. As many have been participating for years, many kinks have been worked out, creating streamlined processes. One retailer described the process as "timely and seamless."

8.7.3.10 Program Satisfaction and Recommendations

Retailers are satisfied with the program overall. The three retailers who responded indicated they were *satisfied* when asked to rate their satisfaction using the categories *very satisfied*, *satisfied*, *neither satisfied nor dissatisfied*, *dissatisfied*, or *very dissatisfied*. One retailer said they have received "no complaints from the sales team," implying satisfaction with the program. Other specific responses included the following:

> *"We're "happy." It's been a reliable program for us. I've enjoyed working in the territory and that it has been consistent."*

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> *"The program is extremely successful and the CLEAResult team is wonderful."*
>
> *"They run a tight ship with advanced power strips."*
>
> *"Satisfied. It's not the top-performing program, but it does well."*

When asked about recommendations for the program, most retailers said they *would like more products offered* through the program. One retailer said they talked with CLEAResult about additional products but were told *it depended on the Arkansas TRM*. Specific equipment to add included weatherization and electricals like smart plugs, wall taps, and 2-plug outlet to a 6−8 that can be controlled remotely. One retailer suggested *retaining* selected products, not just adding new products. They noted other jurisdictions have continued to promote lighting products, especially for underserved communities, and they recommended that EAL do the same.

Like the feedback from distributors, two retailers expressed a desire for *annual updates* on the program—what elements were changing (or not) and how offerings or requirements varied from past years. Both retailers have been involved in the program for years but felt regular communication would be valuable—even an annual kick-off at the start of the year with a program overview would be appreciated and useful. One retailer mentioned *more associate training and education* when field representatives are at stores; this respondent noted that field representatives have built relationships with the stores, so they know the program and the importance of signage and keeping units in stock. They felt the *training and education* would also help associates push program-eligible products to customers. One retailer recommended the program *expand marketing to use different channels*. This retailer said there was more reach that they could do to get more customers aware of the program.

A couple of final comments respondents mentioned include the following:

> *"The program does a great job reaching hard-to-reach customers. It provides energy efficiency products to communities that may not have known about the EAL programs or have access to the information. The program offers tremendous benefits. Our hope is that the program continues."*
>
> *"CLEAResult and the program team are doing exactly what it is supposed to do."*

8.8 NET-TO-GROSS RESULTS

8.8.1 Net-to-Gross Methodology

8.8.1.1 Downstream

The program team assessed NTG via self-reports through the participant customer survey based on the guidance outlined in Protocol F of Arkansas TRM 9.2. Also consistent with Protocol F, we triangulated the participant survey results with the trade ally interviews.

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The sample frame for the survey consisted of customers who installed energy-saving upgrades for qualifying measures or received program services through the program between January 2023 and June 2024[57], stratified into three six-month participation periods. Only participants in the last 12 months (July 2023–June 2024) were asked free-ridership questions and included in the free-ridership assessment to limit the potential for recall issues. We asked spillover questions for participants from January to December 2023, which allowed more time for potential spillover effects to occur.

In total, we surveyed 169 participants on free-ridership and 73 participants on spillover based on their date of participation. Table 116 summarizes the number of participants in the sample, the number who completed surveys by participation period, and the number of measures ultimately evaluated.

Table 116. Point of Purchase Solutions—Summary of Participant Survey Respondents by Participation Period

Participation period			Total completed surveys
Jan 2023–Jun 2023	July 2023–Dec 2023	Jan 2024–Jun 2024	
7	66	103	176

The survey included structured questions about the participant's decision to pursue rebated energy-efficient upgrades to estimate free-ridership. As the Arkansas TRM does not allow for *partial* free riders, participants were either classified as *full* free riders (100 percent free-ridership) or *non-free* riders (0 percent free-ridership) based on their responses to these decision-making questions. Table 117 below shows the survey questions used to classify free riders for rebated equipment.

Table 117. Point of Purchase Solutions—Self-Report Free-Ridership Survey Questions—Equipment Rebates

Survey question	Response options
FR2. Before learning about the Point of Purchase Solutions program, was your organization already planning to purchase the <MEAS> equipment in <YEAR>?	01 Yes
	02 No
	88 Don't know
	99 Refused
FR3. If the program [incentive/discount] had not been available, would your budget have accommodated the full cost of the <MEAS> project?	01 Yes
	02 No
	88 Don't know
	99 Refused
FR4. If the [incentive/discount] or other assistance from the program had not been available, would you still have purchased and installed the exact same <MEAS> or would you have done something different?	01 Same *[SKIP TO FR7]*
	02 Different
	88 Don't know
	99 Refused

[57] Project dates were identified using the ArchEE database field *InstallationDate*.

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Survey question	Response options
FR5. Would you have purchased and installed any <MEAS> equipment at all	01 Yes
	02 No *[SKIP TO FR7]*
	88 Don't know *[SKIP TO FR7]*
	99 Refused *[SKIP TO FR7]*
FR6a [ASK IF FR5=01 and smart thermostats] Smart thermostats come in a variety of models, there are BASIC models that cost about $100-$150 dollars and UPGRADED models that cost about $250-$300 which offer additional sensing technology. If the program did not offer a smart thermostat in <YEAR>, which model would you have likely purchased?	01 Would have purchased the BASIC or UPGRADED model
	02 Would have purchased a standard programmable thermostat (e.g., without smart capabilities)
	03 Would NOT have purchased any thermostat
	88 Don't know
	99 Refused
FR6. [ASK IF FR5=01 and measure <> smart thermostats] Would it have been the same level of efficiency, higher efficiency, or lower efficiency?	01 Same level of efficiency
	02 Higher efficiency
	03 Lower efficiency
	88 Don't know
	99 Refused
FR7. [ASK IF FR4 = 01 OR FR5 = 01] If the [incentive/discount] or other assistance from the program had not been available, when would you have purchased and installed the <MEAS> equipment? Would it have been…	01 At the same time or sooner
	02 Within one year
	03 One to two years later
	04 Three to five years later
	05 More than five years later
	88 Don't know
	99 Refused

To be classified as a *full* free rider, respondents had to meet all three of the following conditions:

- they were already planning to purchase and install the project in the same year before learning about the program (FR2 = 1),
- their budget would have accommodated the full cost of the project in the absence of the program incentive (FR3 = 1), and
- they would have purchased the same or higher efficiency project within one year in the absence of the program ((FR4 = 1 OR (FR6 = 1 OR 2)) AND (FR7 = 1 OR 2)).

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The survey also included structured questions about the participant's decision to request a kit to estimate free-ridership. As the Arkansas TRM does not allow for *partial* free riders, participants were either classified as *full* free riders (100 percent free-ridership) or *non-free* riders (0 percent free-ridership) based on their responses to these decision-making questions. Table 118 below shows the survey questions used to classify free riders for kits.

Table 118. Point of Purchase Solutions—Self-Report Free-Ridership Survey Questions—New Mover Kits

Survey question	Response options
KFR1 Next, we would like to understand what you would have done if you had not received the kit. Which of the following most likely would have happened if you had not received the energy-efficient items at no cost to you?	01 Nothing, I would not have purchased or installed any of the items on my own
	02 I would have purchased and installed some of the items within the next 12 months
	03 I would have purchased and installed all of the same items within the next 12 months
	04 I would have purchased and installed at least some of the items, but not within the next 12 months
	88 Don't know
	99 Refused
KFR2 [ASK IF KFR1=02] Which energy-efficient kit items would you have purchased and installed?	01 Rope door/window caulk roll
	02 Advanced power strip
	03 Self-adhesive silicone rubber V-shape sealer
	77 None of the items [SKIP TO NEXT SECTION]
	88 Don't know
	99 Refused
KFR3 If the program had not been available, would your budget have accommodated the full cost of the kit items?	01 Yes
	02 No
	88 Don't know
	99 Refused
FR7. [ASK IF FR4 = 01 OR FR5 = 01] If the [incentive/discount] or other assistance from the program had not been available, when would you have purchased and installed the <MEAS> equipment? Would it have been…	01 At the same time or sooner
	02 Within one year
	03 One to two years later
	04 Three to five years later
	05 More than five years later
	88 Don't know
	99 Refused

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For kit participants to be classified as a *full* free rider, they had to meet the following conditions; any respondent that did not meet these conditions was classified as a *non-free* rider:

- they were already planning to purchase and install all of the same items in the kit within the next 12 months before learning about the program (KFR1 = 3), or they would have purchased and installed some of the items within the next 12 months (KFR1 = 2)[58], and
- their budget would have accommodated the full cost of the kit items in the absence of the program (KFR3 = 1).

The survey also included structured questions about the participant's decision to have their appliance recycled through the program to estimate free-ridership. Like the other equipment, participants were either classified as *full* free riders (100 percent free-ridership) or *non-free* riders (0 percent free-ridership) based on their responses to these decision-making questions. Table 119 below shows the survey questions used to classify free riders for recycled equipment.

Table 119. Point of Purchase Solutions—Self-Report Free-Ridership Survey Questions—Appliance Recycling

Survey question	Response options
AP3. If Entergy's appliance recycling program was not available, what would you have done with your <MEAS>?	01 Removed it
	02 Kept it
	88 Don't know
	99 Refused
AP4. [IF AP3=01] Would you have removed your <MEAS> in less than 1 year, between 1 and 8 years, more than 8 years, or not until it failed?	01 Less than 1 year (or at the same time that the program removed it) (FR=100, NTG=0)
	02 1 to 8 years (FR=0, NTG=100)
	03 More than 8 years (FR=0, NTG=100)
	04 Not until it failed (FR=0, NTG=100)
	88 Don't know (FR=0, NTG=100)
	99 Refused

For participants in the Appliance Recycling component to be classified as *full* free riders, they had to meet the following condition; any respondent that did not meet this conditions was classified as a *non-free* rider:

- they were going to remove the appliance in the same year the program removed the appliance (AP4=1).

The participant surveys also included several consistency checks to verify a participant's free-ridership status. These consistency checks provide additional information about the participant's decision to install the program-provided measures and are used to substantiate their classification as a *full* free rider or *non-free* rider. Consistency check questions include whether the participant received a recommendation to install a piece of equipment and how influential that recommendation was on their decision. We also asked how influential the program incentive and other program assistance were on their decision to install the efficient measure.

[58] Note: Free-ridership was assigned based on the equipment mentioned in KFR2.

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After reviewing these consistency questions, we adjusted the free-ridership score for 41 respondents. Thirty-four New Mover Kit respondents indicated that a program element was *very important* in their decision to request and install the kit equipment at the time they did, six Marketplace respondents and one Mail-In Rebate respondent indicated their contractor or retailer was *very important* in their decision to make the energy-saving improvements through the program.

The survey assessed spillover by asking about recent installations of any additional energy-efficient improvements since program participation *without* EAL's financial assistance. This applied to all program components except for Appliance Recycling, where the NREL UMP[59] recommends no spillover as the program does not provide an education component as other programs do. Then, respondents reported the importance of their experience in EAL's POPS program on their decision to install these additional improvements. Full savings resulting from the measure were attributed to the program as spillover if the respondent said *very important*, and we attributed half-savings to the program if the respondent said *somewhat important*. Respondents who stated that their experience was *not at all important* or *not very important* received no spillover savings. Any equipment mentioned that was not incentivized by EAL was reviewed against other TRMs for savings values.

We estimated free-ridership and spillover rates for each respondent using the methodology described above. Individual free-ridership and spillover rates were then weighted to adjust for proportional sampling differences, non-response, and gross energy savings to calculate overall estimates representative of the program population. NTG ratios were then calculated using the following equation:

$$NTG\ Ratio = 1 - Free\text{-}Ridership + Spillover$$

8.8.1.2 Midstream

The program team assessed NTG via self-reports through the participant customer survey based on the guidance outlined in Protocol F of Arkansas TRM 9.2. Also consistent with Protocol F, we triangulated the participant survey results with the trade ally interviews.

The sample frame for the survey consisted of customers who installed energy-saving upgrades for qualifying measures through the program between January 2023 and June 2024[60], stratified into three six-month participation periods. Only participants in the last 12 months (July 2023–June 2024) were asked free-ridership questions and included in the free-ridership assessment to limit the potential for recall issues. To limit the respondent burden and the potential for project confusion, we collapsed all *lighting* completed during the participation period per customer for the free-ridership. We asked spillover questions for participants from January to December 2023, which allowed more time for potential spillover effects to occur.

In total, we surveyed 45 participants on free-ridership and 8 participants on spillover based on their date of participation. Table 120 summarizes the number of participants in the sample, the number who completed surveys by participation period, and the number of measures ultimately evaluated.

[59] Chapter 7: Refrigerator Recycling Evaluation Protocol. The Uniform Methods Project: Methods for Determining Energy-Efficiency Savings for Specific Measures. https://www.nrel.gov/docs/fy17osti/68563.pdf

[60] Project dates were identified using ArchEE database field *InstallationDate*.

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Table 120. Point of Purchase Solutions—Summary of Participant Survey Respondents by Participation Period

Participation period			Total completed surveys
Jan 2023 - Jun 2023	July 2023 - Dec 2023	Jan 2024 - Jun 2024	
0	9	36	45

The survey included structured questions about the participant's decision to pursue rebated energy-efficient upgrades to estimate free-ridership. As the Arkansas TRM does not allow for *partial* free riders, participants were either classified as *full* free riders (100 percent free-ridership) or *non-free* riders (0 percent free-ridership) based on their responses to these decision-making questions. Table 121 below shows the survey questions used to classify free riders.

Table 121. Point of Purchase Solutions—Self-Report Free-Ridership Survey Questions

Survey question	Response options
FR2. Entergy was responsible for the discount you received for the <MEAS> equipment. Before learning about the Point of Purchase Solutions program, was your organization already planning to purchase the <MEAS> equipment in <YEAR>?	01 Yes
	02 No
	88 Don't know
	99 Refused
FR3. If the program discount had not been available, would your <YEAR> budget have accommodated the full cost of the <MEAS> equipment?	01 Yes
	02 No
	88 Don't know
	99 Refused
FR4. If the discount from the program had not been available, would you still have purchased the exact same <MEAS> equipment, or would you have purchased something different?	01 Same *[SKIP TO FR7]*
	02 Different
	88 Don't know
	99 Refused
FR5. Would you have purchased any <MEAS> equipment at all?	01 Yes
	02 No *[SKIP TO FR7]*
	88 Don't know *[SKIP TO FR7]*
	99 Refused *[SKIP TO FR7]*
FR6. *[ASK IF FR5 = 1]* Would it have been the same level of efficiency, higher efficiency, or lower efficiency?	01 Same level of efficiency
	02 Higher efficiency
	03 Lower efficiency
	88 Don't know
	99 Refused

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Survey question	Response options
FR7. [ASK IF FR4=01 OR FR5=01] If the discount from the program had not been available, when would you have purchased the <MEAS> equipment? Would you have purchased it…	01 At the same time or sooner
	02 Within one year
	03 One to two years later
	04 Three to five years later
	05 More than five years later
	88 Don't know
	99 Refused

To be classified as a *full* free rider, respondents had to meet the following conditions; respondents were classified as a *non-free* rider if they did not meet all three of these conditions:

- they were already planning to purchase and install the project in the same year before learning about the program (FR2 = 1),
- their budget would have accommodated the full cost of the project in the absence of the program incentive (FR3 = 1), and
- they would have purchased the same or higher efficiency project within one year in the absence of the program ((FR4 = 1 OR (FR6 = 1 OR 2)) AND (FR7 = 1 OR 2)).

The participant survey also included several consistency checks to verify a participant's free-ridership status. These consistency checks provide additional information about the participant's decision to install the program-provided measures and are used to substantiate their classification as a *full* free rider or *non-free* rider. Consistency check questions include whether the participant received a recommendation to install a piece of equipment and how influential that recommendation was on their decision. We also asked how influential the program incentive and other program assistance were on their decision to install the efficient measure. After reviewing these consistency questions, the evaluation team adjusted three records for respondents who said the program was *very important* to their project.

The survey assesses spillover by asking about recent installations of any additional energy-efficient improvements since program participation *without* EAL's financial assistance. Then, respondents reported the importance of their experience in EAL's POPS program on their decision to install these additional improvements. Full savings resulting from the measure were attributed to the program as spillover if the respondent said *very important*, and we attributed half-savings to the program if the respondent said *somewhat important*. Respondents who stated that their experience was *not at all important* or *not very important* received no spillover savings.

We estimated free-ridership and spillover rates for each respondent using the methodology described above. Individual free-ridership and spillover rates were then weighted to adjust for proportional sampling differences, non-response, and gross energy savings to calculate overall estimates representative of the program population. NTG ratios were then calculated using the following equation:

$$NTG\ Ratio = 1 - Free\text{-}Ridership + Spillover$$

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8.8.1.3 Upstream

The program team assessed NTG via interviews with retailers, including local stores, corporate stores, and equipment suppliers. The EM&V team was supplied with contact information from the program implementer. We interviewed seven retailers, including a mix of the three retailer groups. The interview included questions about how the program impacted the retailer's sales. If the program did not impact the sales, the retailer was given a free-ridership score of 100 percent. If the retailer's sales would have been lower, the EM&V team asked how much lower their sales would have been. The response to that question was used to calculate their NTG rate.

Because of the variety of responses and delivery channels, the EM&V team conducted benchmarking and utilized the prior evaluation results to recommend an overall NTG rate.

8.8.2 Overall Results

Due to the diverse sectors, delivery channels, and measures offered in the POPS program, the EM&V team established NTG ratios at sector, delivery channel, and delivery channel/measure levels (when sufficient data were collected). The results of the NTG research by delivery channel are presented in Table 122 below.

For the upstream residential sector, the team recommends an NTGR of 70 percent for general population sales at non-low-income retail stores, 100 percent for general community and corporate events, and 100 percent for low-income targeted sales, such as discount stores in low-income areas and giveaway events partnered with non-profit organizations at food banks and low-income community events.

The team recommends an NTG ratio of 65 percent for commercial midstream, which is delivered to customers through trade allies. There was also sufficient survey completion to determine a measure-level NTG ratio of 69 percent for exterior and 62 percent for interior fixtures.

Finally, the residential downstream sector includes a variety of measures across different delivery channels. The team recommends an NTG ratio for each delivery channel, ranging from 49−127 percent, with an overall average of 84 percent. Where sufficient survey responses exist (ten or more), the EM&V team recommends using measure-level NTG values (refer to the detailed measure results sections below). Additional detailed results that support these recommendations can be found in the remainder of this section.

Table 122. Point of Purchase Solutions—PY2024 NTG Ratios by Delivery Channel

Sector	Delivery channel	NTG recommendation
Residential upstream	Retail - non-low-income	70%
	Retail – low-income	100%
	Food bank	100%
	Events – low-income	100%
	Events - corporate	100%
	Events - community	100%

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Sector	Delivery channel	NTG recommendation
Commercial midstream	Trade allies	65%
Residential downstream	Mail-in rebates	62%
	Appliance recycling	49%
	Marketplace - purchase	100%
	Marketplace - new mover kit	127%

8.8.2.1 Upstream Measures

Estimating NTG ratios for upstream programs is challenging because consumers receive discounts automatically without having to provide any account or contact information. This limits evaluators' ability to assess the program's influence on purchases. The EM&V team used feedback from PY2024 retailer interviews, benchmarking, and the prior evaluation to recommend an NTG ratio.

Based on the evaluation activities' results, the team recommends an NTG ratio of 70 percent for general population sales at non-low-income retail stores. The team recommends 100 percent for low-income targeted sales, such as discount stores in low-income areas and giveaways partnered with non-profit organizations at food banks and low-income community events. Finally, 100 percent is recommended for the NTG for measures given away at corporate CEI events and community events. Table 123 below shows the free-ridership and NTG result estimates by analysis activity.

Table 123. Point of Purchase Solutions—Upstream NTG Result Estimates

Method	NTG
PY2024 retailer in-depth interview NTG	80%
PY2024 benchmarking	78%
Prior evaluation results	53%
Final recommendation—upstream low-income retail, food bank, and low-income event giveaways	**100%**
Final recommendation—upstream general community and corporate events	**100%**
Final recommendation—upstream non-low-income	**70%**

The following sections detail the NTG result estimates by evaluation activity.

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i. PY2024 Retailer Interviews

In PY2024, the EM&V team found that the program had a varying influence on the retail sales of program-qualifying equipment. Five of the seven respondents said their sales *would have been lower* without the program. Of those who could quantify the change (three respondents), the percentages ranged from 8−100 percent. An additional respondent said they *would have had some sales but not a lot*. The fifth respondent said the lower sales *would depend on the equipment but could not provide a percentage*. Retail stores or product suppliers who work with retail stores state there are certain situations where these products would not be on the shelves if it were not for the program.

To calculate free-ridership, we ask retailers to estimate how much lower the sales of energy-efficient equipment would have been without the program. The free-ridership for non-low-income stores was 20 percent. Some low-income retailers do not offer many energy-efficient items, and the sales of those times were unlikely to have been sold without the program. The EM&V team believes the equipment in low-income stores would not be available if the program was not available and therefore recommends that the NTG for these stores remain 100 percent.

ii. Benchmarking Results

Tetra Tech reviewed NTG rates established by nine program administrators for midstream and upstream programs between 2019 and 2022. These programs were delivered by Ameren Illinois, Commonwealth Edison Company, EAL, Focus on Energy, Northern Indiana Public Service Company, Orange and Rockland Utilities, PPL Electric Utilities, Southern California Edison, and Rocky Mountain Power. Benchmarking results were similar across the delivery methods and ranged from 0.70 to 1.00.

Table 124. Point of Purchase Solutions—Benchmarking Summary

Equipment type	NTG
Advanced power strips	70% to 100%
Clothes dryer	78%
Clothes washer	78%
ENERGY STAR air purifier	70% to 100%
Freezer	78% to 100%
Refrigerator	72%
Room air conditioner	72% to 100%
Heat pump water heater	78% to 100%

8.8.2.2 Commercial Midstream Results

The EM&V team recommends an NTG ratio of 65 percent for the Commercial Midstream component based on participant survey results triangulated with distributor interviews. Participant survey results found an NTG rate of 87 percent, and distributor feedback indicated some level of market transformation. The EM&V team believes an NTG ratio of 65 percent aligns with the program's NTG ratio according to distributor feedback, market saturation, and NTG ratios from commercial midstream program participants.

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i. Distributor Interviews

According to the distributors we spoke with as part of the PY2024 evaluation, the Midstream Lighting delivery channel had a mixed impact on the sales of energy-efficient lighting. Two of the six distributors said the program *did not impact their sales*. Four of the distributors said the program *impacted their sales*. One said their sales would have been 5 percent lower, and one said 20 percent lower had the program not existed. Two respondents could not quantify the impact, with one saying they would need to change their sales strategy if the program did not exist. With the increased saturation of energy-efficient lighting in the market and the continued decrease in pricing, respondents felt their sales would stay the same in the next 12 months.

To calculate free-ridership, we ask distributors to estimate how much lower sales of energy-efficient lighting would have been absent from the program. Their free-ridership is high, 56 percent, because the program did not impact the sales for two of the four distributor respondents.

ii. Participant Survey

The participant survey included questions about their decision to purchase program-discounted lighting to estimate free-ridership from the customers' perspective. To be classified as a *full* free rider, respondents must have indicated all the following conditions:

- they were already planning to purchase and install the project in the same year before learning about the program,
- their budget would have accommodated the full cost of the project in the absence of the program incentive, and
- they would have purchased the same or higher efficiency project within one year in the absence of the program.

The resulting NTG ratio was 87 percent. No spillover was indicated, so the NTG is driven by free-ridership, which was 13 percent. Three respondents were initially coded as *full* free riders, but after looking at the consistency check questions, there was an indication that the discount was influential in the project.

We also examined NTG by the different equipment types. Free-ridership was higher for interior fixtures than for other equipment. Response to some categories is low, so care should be taken when reviewing results at this level.

Table 125. Point of Purchase Solutions—Net-to-Gross by Strata for Midstream

Strata	Respondents	Free-ridership	Spillover	NTG	Margin of error on free- ridership
Exterior fixtures	11	5.3%	0.0%	94.7%	17.8%
Interior fixtures	18	19.5%	0.0%	80.5%	15.0%
Interior lamps	7	2.5%	0.0%	97.5%	20.9%
Mix of fixtures and lamps	9	10.9%	0.0%	89.1%	21.1%
Total	**45**	**13.2%**	**0.0%**	**86.8%**	**9.2%**

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Due to the high free-ridership for distributors, the EM&V team recommends that the overall 65 percent NTG ratio acknowledge the influence that participants report the program having on their decision to implement energy-efficient lighting projects. The table below provides an overall NTG value for the measures that incorporate the distributor feedback. When the number of participant responses is less than ten, the overall program NTG value is recommended.

Table 126. Point of Purchase Solutions—Overall Net-to-Gross by Strata for Midstream

Strata	Participant responses	Participant NTG	Distributor NTG	Overall NTG
Exterior fixtures	11	94.7%	44.0%	69.4%
Interior fixtures	18	80.5%		62.3%
Interior lamps	7	97.5%		70.8%
Mix of fixtures and lamps	9	89.1%		66.6%
Total	**45**	**86.8%**		**65.4%**

8.8.2.3 Downstream Results

Based on participant survey results, the EM&V team recommends an NTG ratio of 84 percent for the Downstream sector. The NTG ratios varied between the delivery channels, ranging from 49 percent for Appliance Recycling to 127 percent for New Mover Kit.

iii. Participant Survey

The participant survey included questions about their decision to purchase equipment, request a kit, or schedule an appliance pickup to estimate free-ridership from the customers' perspective. Given the different delivery models, NTG was calculated separately for the different POPS Downstream delivery channels.

To be classified as a *full* free rider for the purchase of equipment, respondents must indicate the following conditions; respondents were classified as a *non-free* rider if they did not meet all three of these conditions:

- they were already planning to purchase and install the project in the same year before learning about the program (FR2 = 1),
- their budget would have accommodated the full cost of the project in the absence of the program incentive (FR3 = 1), and
- they would have purchased the same or higher efficiency project within one year in the absence of the program ((FR4 = 1 OR (FR6 = 1 OR 2)) AND (FR7 = 1 OR 2)).

For New Mover Kit participants to be classified as a *full* free rider, respondents must indicate the following conditions; any respondent that does not meet these conditions will be classified as a *non-free* rider:

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- they were already planning to purchase and install all the same items in the kit within the next 12 months before learning about the program (KFR1 = 3), or they would have purchased and installed some of the items within the next 12 months (KFR1 = 2)[61] and
- their budget would have accommodated the full cost of the kit items in the absence of the program (KFR3 = 1).

For Appliance Recycling participants to be classified as a *full* free rider, respondents must indicate the following condition; any respondent that does not meet this condition will be classified as a *non-free* rider:

- they were going to remove the appliance in the same year the program removed the appliance (AP4=1).

Based on these questions and criteria, NTG was calculated for each delivery channel. NTG was highest for the New Mover Kit delivery channel due largely to the low free-ridership (3 percent) and high spillover (29 percent). NTG was lowest for the Appliance Recycling component because of the high free-ridership (51 percent).

Table 127. Point of Purchase Solutions—Net-to-Gross by Downstream Delivery Channel

Delivery channel	Free-ridership responses	Free-ridership	Spillover responses	Spillover	NTG	Margin of error on free- ridership
Mail-in rebates	20	44.4%	15	5.9%	61.5%	14.2%
Appliance recycling	37	51.4%	N/A	N/A	48.6%	12.9%
Marketplace - purchase	62	13.0%	3	12.7%	99.7%	6.4%
Marketplace - new mover kit	50	2.8%	26	29.3%	126.5%	1.5%
Total	**169**	**26.4%**	**55**	**10.7%**	**84.4%**	**3.1%**

Below in Table 128, the EM&V team provides NTG rates by measure from the participant survey results. Note that some of the responses for measures are low, so care should be taken when reviewing results at this level. When the number of participant respondents is less than ten, the delivery channel NTG value is recommended. Free-ridership was consistent between refrigerators and freezers in the Appliance Recycling delivery channel. The Mail-In Rebate delivery channel saw full free-ridership for the appliances in the program, except for *smart thermostats*, which had a free-ridership rate of 42 percent. The Marketplace delivery channel had no free-ridership except for the *smart thermostats*, which had a free-ridership rate of 14 percent. For the New Mover Kit delivery channel, respondents were asked about each piece of equipment in the kit. While each measure had low free-ridership, the *caulk* had a slightly higher free-ridership rate. Spillover for the New Mover Kit delivery channel was split between all measures in the kit.

[61] Note: Free-ridership assigned based on the equipment mentioned in KFR2.

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Table 128. Point of Purchase Solutions—PY2024 NTG for Downstream Delivery Channel by Measure

Delivery channel	Measure	Free-ridership responses	Free-ridership	Spillover responses	Spillover	NTG	Margin of error on free-ridership
Appliance recycling	Appliance recycling – freezer	10	50.0%	1	0.0%	50.0%	24.8%
	Appliance recycling - refrigerator	27	51.9%	N/A	N/A	48.1%	15.1%
Mail-in rebates	Energy Star dehumidifiers	4	100.0%	1	0.0%	0.0%	0.0%
	Energy Star freezers	1	100.0%	0	N/A	0.0%	0.0%
	ENERGY STAR room air cleaners	1	100.0%	1	0.0%	0.0%	0.0%
	Pool pumps	0	N/A	2	0.0%	N/A	N/A
	Smart thermostats - POPS only	14	41.6%	11	8.2%	66.6%	15.4%
Marketplace - purchase	Advanced power strips - retail	2	0.0%	1	0.0%	100.0%	0.0%
	Energy Star dehumidifiers	2	0.0%	0	N/A	100.0%	0.0%
	ENERGY STAR room air cleaners	20	0.0%	1	0.0%	100.0%	0.0%
	POPS weatherization retail	2	0.0%	1	0.0%	100.0%	0.0%
	Smart thermostats - POPS only	36	14.4%	18	13.1%	98.6%	10.6%
Marketplace - new mover kit	Advanced power strip	50	2.0%	26	29.3%	127.3%	3.0%
	Self-adhesive silicone rubber V-shape sealer (Frost King)	50	2.0%	26	29.2%	127.2%	3.0%
	Door or window rope caulk (Mortite)	50	4.0%	26	29.2%	125.2%	4.2%

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9.0 LARGE COMMERCIAL AND INDUSTRIAL SOLUTIONS

The primary objective of the Large Commercial and Industrial (C&I) Solutions (Large C&I Solutions) program is to provide a solution for nonresidential customers interested in purchasing energy-efficient technologies that can produce verifiable savings either through a calculated (prescriptive) or a measured and verified (custom) approach. Participants can receive incentives for various measures such as *lighting and controls*, *variable speed drives*, *heating*, *ventilation*, *and air conditioning* (*HVAC*) *equipment*, *refrigeration equipment*, *office equipment*, *food service equipment*, *air compressor systems*, and *industrial process* upgrades. Incentives and savings for prescriptive measures are based primarily on measures in the current Arkansas Technical Reference Manual (TRM). Large C&I Solutions is available to all C&I customers with a connected load of over 100 kilowatts (kW).

Large C&I Solutions includes both prescriptive and custom approaches. The prescriptive path allows eligible customers to choose from a large menu of qualified technologies, such as *lighting and controls*, *motors*, *HVAC equipment*, *refrigeration equipment*, *domestic hot water*, *envelope* measures, and *food service equipment*. The custom path supports customers in identifying and implementing site-specific and cost-effective retrofit and new construction energy efficiency projects through technical assistance, program referrals, and incentives. The program addresses *industrial process improvements*, *chillers*, *boilers*, *data center efficiency*, *plug-load controls*, and other *non-prescriptive* measures. The program is designed to yield substantial energy savings through energy audits, co-funding feasibility studies, Energy Performance Ratings using ENERGY STAR's® Portfolio Manager, and training in best practices.

Large C&I Solutions is designed to reduce or bypass market barriers such as the following:

- lack of energy efficiency information and awareness of energy and non-energy benefits (NEB),
- the perception that energy-efficient technologies have high initial costs,
- lack of customer understanding about measure payback,
- lack of customer awareness of energy-efficient technologies,
- lack of easy access to qualified vendors and installers,
- absence of tools to quantify savings,
- lack of access to capital, and
- split incentives between owners and tenants in leased spaces.

Incentives are paid to program participants pending project completion and verification and will vary by measure. The final incentive levels are determined in the final program implementation planning period. Most incentives are targeted for planning to achieve 50 percent of incremental costs.

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Paid incentive totals will be initially capped by Tax ID Group so that all customer groups have an equal chance to participate. However, these cap levels may change based on expected or demonstrated participation and savings rates among Tax ID Groups to maximize program cost-effectiveness. To maximize participation, incentives will be subject to a per-customer cap; for planning purposes, no single customer (by Tax ID Group) is eligible to receive more than 50 percent of the program incentive budget. Entergy Arkansas, LLC (EAL) does not provide incentives that are prohibited within the promotional practice rules.

The program is implemented by EAL and CLEAResult, who provide recruitment, marketing, outreach, and training to trade allies. On behalf of EAL, CLEAResult performs energy assessments, directly installs measures (e.g., *low-flow faucet aerators, pre-rinse spray valves, low-flow showerheads, weather stripping,* and *refrigeration strip curtains* and *door gaskets*), conducts pre- and post-implementation inspections, maintains the program quality assurance/quality control (QA/QC) standards, and administers the incentive process, including program tracking, directly with participating trade allies.

A network of qualified trade allies is used to perform installations of energy efficiency measures. This network works closely with EAL and CLEAResult for program training and marketing. As part of program marketing and outreach to EAL customers, they can identify potential projects and notify EAL of opportunities. All trade allies must meet the program's technical and quality standards and sign a trade ally agreement form. Large C&I Solutions is designed to generate significant energy savings and longer-term market penetration by nurturing delivery channels, such as design professionals, distributors, installation contractors, and energy service companies (ESCO).

In support of the impact evaluation, the evaluation, measurement, and verification (EM&V) team conducted a tracking system review, desk reviews on a randomly selected sample of 70 projects, 30 on-site visits, a review of program documentation, and early engagement reviews for 11 projects.

Table 129. Large Commercial and Industrial Solutions—Data Collection and Evaluation Activities

Net-to-gross (NTG) approach	Process evaluation activities	Gross impact evaluation completes				
		Tracking system review	Early engagement reviews	Desk reviews	On-site M&V	Metered data analysis[62]
PY2024 primary data from the participant survey and trade ally interviews	Program staff interviews (2) Materials review Participant surveys (123) Trade ally interviews (12)	Census	11	70	30	27

[62] This column refers to EAL customer meter data, supplemented by EM&V team data collection, as opposed to primary metered data collected as part of the on-site measurement and verification (M&V).

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9.1 KEY FINDINGS

Based on the program year (PY) 2024 (PY2024) program tracking data, Large C&I Solutions incentivized energy efficiency measures to 371 unique participants[63] through 61 trade allies. Table 130 provides the program's claimed savings by measure category. The largest number of participants, 162, was attributable to *lighting* and *lighting-new construction* measures, which combined for 22 percent of claimed energy savings. The most significant energy savings were for *continuous energy improvement (CEI)* (53 percent) from twelve participants. The second most impactful measure category by energy savings was *custom other*, with 17 percent of claimed energy savings from 36 participants.

Table 130. Large Commercial and Industrial Solutions—Reported Participation and Savings[64]

Measure category	Trade allies	Participants[65]	Projects[65]	Program savings (kWh)	Percentage of program savings (kWh)
Compressed air	2	12	13	1,092,697	1.0%
Continuous energy improvement[66]	0	34	51	54,423,016	51.3%
Custom HVAC	7	17	18	1,880,278	1.8%
Custom other	20	36	65	18,255,841	17.2%
Domestic hot water[66]	0	9	9	79,863	0.1%
Envelope[66]	0	55	57	2,787,529	2.6%
HVAC	11	30	30	911,315	0.9%
Lighting	18	112	122	10,328,671	9.7%
Lighting—new construction	9	50	51	12,895,262	12.2%
Motors	3	20	20	194,683	0.2%
Other[66]	0	2	2	895,482	0.8%
Refrigeration	1	21	21	937,357	0.9%
Tune-up	7	54	355	1,449,243	1.4%
Total	**61**	**371**	**774**	**106,131,237**	**100.0%**

[63] A unique participant is based on a single utility account number.

[64] ArchEE extract dated February 24, 2025.

[65] A participant may install measures across multiple measure categories or multiple projects. Thus, the total count of participants and projects may not equal the sum of individual rows by measure category.

[66] The implementer directly installed or implemented all measures.

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In PY2024, Large C&I Solutions reported 106,131 megawatt-hours (MWh) in gross energy savings and 16.4 megawatts (MW) in gross demand savings. Table 131 below shows the reported and evaluated savings across the program. The program achieved its planned energy and demand savings goals, reaching 101 percent of the annual energy and 116 percent of the annual demand savings goals, as shown in

Table 132.

Table 131. Large Commercial and Industrial Solutions—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio[67]	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	106,131	105,727	99.6%	100.8%	106,560	42.3%
Demand savings (MW)	16.4	17.1	104.3%	100.7%	17.2	21.4%

Table 132. Large Commercial and Industrial Solutions—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	105,504	106,560	101.0%
Demand savings (MW)	14.9	17.2	115.6%

Large C&I Solutions' evaluated energy savings were slightly lower than the reported savings (99.6 percent kilowatt-hour realization rate), while the demand savings were higher than reported (104.3 percent kilowatt realization rate). The primary reason for the demand savings realization rate being higher than energy savings was adjustments to the *HVAC* measure for the baseline efficiencies used in the calculations from Arkansas TRM 9.2. The evaluated savings are based on the results of savings calculations and adjustments made across the results of the 70 sampled accounts for desk reviews and site visits. *Tune-up* measure savings were based on a comprehensive tracking system review.

The participant survey resulted in an overall NTG ratio of 100.7 percent, including free-ridership and spillover. Overall, free-ridership was low (0.7 percent), and 1.4 percent of spillover was observed, resulting in an overall NTG ratio of 100.7 percent.

The evaluation research found that the program operates as expected and has a high level of influence in the customer decision-making process. Satisfaction among participating customers and trade allies (also referred to as contractors) is high. Trade allies report a good variety of items available through the program and that almost all types of customers can participate (e.g., large commercial, small business, and non-profit organizations). They appreciate that the program helps businesses in Arkansas bring down their energy costs. Contractors continue to be one of the primary ways customers learn of the program. Therefore, efforts to keep contractors informed of updates and trained to effectively market the program should continue.

[67] Net-to-gross (NTG) ratios were applied at the measure level for *tune-ups* (99.0 percent), *envelope* (101.7 percent), *lighting* (102.0 percent), and *refrigeration* (95.9 percent). All others used the program average of 100.7 percent.

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At the same time, the majority of participants said their preferred method of receiving information is directly from EAL in emails.

9.2 RECOMMENDATIONS

The EM&V team has identified four recommendations for consideration by EAL (Table 133), which primarily focus on improving the realization rate in the following program year and increasing the transparency, accuracy, and evaluability of program savings in the future for Large C&I Solutions.

Table 133. Large Commercial and Industrial Solutions—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Increase QA/QC on measure calculations, and data transcriptions.	The EM&V team adjusted savings for multiple projects resulting from transcription or formula errors. Three projects were identified with formulas that did not include the proper range of data. Two projects included transcription errors from project documentation to project calculations. One project used the same efficiency for two units, which had differing efficiencies. Finally, one project recorded a different savings value in the tracking system than calculated in the project calculator. Overall, these adjustments represented the largest adjustments to energy savings from the PY2024 evaluation.
	Recommendation 2: Ensure baseline HVAC efficiencies are using values from the current federal standard.	The EM&V team found three projects where the baseline HVAC full-load efficiency (energy efficiency ratio, EER) was converted from the part-load efficiency (seasonal energy efficiency ratio/integrated energy efficiency ratio (SEER/IEER)) rather than using the current federal standard. The TRM did not include the values explicitly, which required following the references in the TRM to find the current values. The EM&V team will make a recommendation to the independent evaluation monitor (IEM) to update the TRM to include these values explicitly. For PY2025, the implementer should use the current federal standard. This finding represented the largest adjustment to demand savings from the PY2024 evaluation.
	Recommendation 3: Review savings algorithms for *Wi-Fi thermostat* measures to ensure consistency	The EM&V team identified thirteen projects where the reported fuel type was *air conditioning with electric resistance heat*, but savings were calculated using deemed savings values associated with a *heat pump unit*. The EM&V team recommends reviewing the deemed savings values and calculation algorithms for *Wi-Fi thermostat* measures to ensure consistency based on the tracked fuel type.

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Type	Recommendation	Key finding
	Recommendation 4: Update savings calculations for *lighting retrofit* projects with existing controls.	The EM&V team identified a project that did not correctly apply Formula 334 from TRM 9.2 for the demand savings on *lighting retrofit* measures with existing controls. The implementer should review the tracking system algorithms or other calculation tools, and update to the prescribed TRM formula.

Table 134. Large Commercial and Industrial Solutions—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Continue discussions with the EM&V team and IEM on the sources of and uses for weather data in *continuous energy improvement* (CEI) and *custom* projects.
	  ○ In progress.
	• Increase the review of the statistical results on regression coefficients for projects.
	  ○ Complete. The PY2024 evaluation did not result in adjustments from the statistical analysis.
	• Increase QA/QC of formulas and entered parameters for *custom* projects.
	  ○ Complete.
	• Enhance QA/QC of general service lamp baseline wattage.
	  ○ Complete.

BY2023 process recommendations	• Continue early engagement reviews to gain consensus across the EM&V team, EAL, and the implementer, particularly for *custom* and *CEI* projects over an agreed-upon savings threshold. Discuss whether savings thresholds for reviews should be adjusted for the next program cycle. ○ Continuing.

9.3 METHODOLOGY

This section summarizes the methodologies used for the evaluation of Large C&I Solutions.

9.3.1 Impact Evaluation

The evaluated savings results are based on calculations and adjustments made during the tracking system review, *tune-up* measure review, 70 engineering desk reviews, and 30 site visits. Savings adjustments were made at the project level. Final evaluated savings for the *tune-up* measures are based on adjustments made during the tracking system review. All other measures' evaluated savings results are based on desk review and site-visit level adjustments by sampled strata. The tracking system informed qualitative findings and served as a guide for potential issues for investigation during desk reviews.

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To perform the PY2024 impact evaluation, the EM&V team completed the following activities:

- staff interviews and ongoing discussions;
- program website review of eligible measures, incentives, and participating trade allies;
- program manual and supplemental documentation review;
- program tracking system/database reviews;
- review of the tracking system and measurement and verification (M&V) database for *tune-ups,* and *commercial Wi-Fi thermostats*;
- engineering desk review of 70 sampled projects, representing 55 unique account numbers*;* and
- on-site M&V of 30 sampled projects that also received desk reviews.

Table 135 shows the sample design and achieved sample sizes for the different data collection types employed for the impact evaluation effort.

Table 135. Large Commercial and Industrial Solutions—Data Collection Efforts and Project Types

Data collection activity	Design sample	Achieved sample	Custom projects	Prescriptive projects
Staff interviews	2	2	N/A	N/A
Tracking system data review[68]	Q1–Q2 Census	Q1–Q2 Census	N/A	135
Engineering desk review[69]	70	70	43	30
On-site M&V visit[70]	30	30	14	18
Tune-up measure data review	Census	Census	N/A	N/A

Most of the measures incentivized by Large C&I Solutions in PY2024 are currently included in the TRM 9.2, Volume 2. Specific sections of TRM 9.2 associated with the savings developed for Large C&I Solutions measures are provided in Table 136. These prescriptive algorithms and assumptions were the basis of the savings methodology used by the implementer and the EM&V team for energy and demand savings analysis purposes.

[68] ArchEE extract dated July 10, 2024. The count of *prescriptive* projects is the quantity of unique *JobId* numbers for the measure categories included in the Q1–Q2 tracking database review.
[69] Three participants had both *prescriptive* and *custom* measures incentivized under the same *JobId*.
[70] On-site visits were recruited from the list of participants that received desk reviews, nesting the on-site sample within the desk review sample. Two participants had *prescriptive* and *custom* measures incentivized under the same *JobId*.

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Table 136. Large Commercial and Industrial Solutions—TRM 9.2 Prescriptive Algorithms Utilized by the Large Commercial and Industrial Solutions Program

Measure category	TRM 9.2 section	TRM 9.2 measure name
Compressed air	3.8.1	Compressor replacement
	3.8.2	No loss condensate drains
	3.8.4	System pressure reduction
Domestic hot water	3.3.2	Faucet aerators
	3.3.5	Low-flow showerheads
Envelope	3.2.10	Commercial door air infiltration
HVAC	3.1.14	Packaged terminal AC/HP (PTAC/PTHP) equipment
	3.1.16	Unitary and split-system AC/HP equipment
	3.1.17	Air- or water-cooled chilling equipment (chillers)
Lighting	3.6.2	Lighting controls
	3.6.3	Lighting efficiency
Motors	3.4.1	Electronically commutated motors for refrigeration and HVAC applications
	3.4.2	Premium efficiency motors
Other	3.9.6	High-efficiency battery chargers
Refrigeration	3.5.6	Strip curtains for walk-in coolers and freezers
	3.5.7	Door gaskets for walk-in and reach-in coolers and freezers
	3.5.9	Evaporator fan controls

Air conditioner and *heat pump tune-ups, overhead door weather stripping*, and *packaged terminal air conditioner (PTAC) sealing* measures were also incentivized through Large C&I Solutions. *Overhead door weather stripping* and *PTAC sealing* measures do not strictly adhere to TRM 9.2; instead, they follow prescriptive approaches developed by CLEAResult based on the TRM algorithms for *commercial door air infiltration*. Additional project details outside ArchEE were required to evaluate the *tune-up* measures, which follow a partial M&V approach. A separate tracking system review was conducted for all *tune-up* measures across the three commercial programs.

Table 137. Large Commercial and Industrial Solutions—Non-TRM Prescriptive Algorithms Utilized by the Large Commercial and Industrial Solutions Program

Measure category	Measure description
Tune-ups (formerly CoolSaver)	Commercial AC post-test-out
	Commercial AC pre-clean
	Commercial central air conditioner (tune-up)
	Commercial heat pump (tune-up)
	Commercial HP post-test-out

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Measure category	Measure description
	Commercial HP pre-clean
	Commercial Wi-Fi thermostat
Envelope	Overhead door weather stripping
	Overhead door weather stripping for refrigerated spaces
	PTAC sealing

9.3.1.1 Tracking System Review

The EM&V team reviewed all tracking data to assess the extent to which it provided the key input parameters needed for TRM 9.2-based algorithms. The tracking system data review began using TRM 9.2 as a reference in our review of measure-level savings assumptions. Chapters of TRM 9.2 utilized for the tracking system review are described above in Table 138.

The EM&V team reviewed the tracking systems linkage to the TRM 9.2 deemed savings algorithms used to estimate savings. This review was completed across a census of the program measures at the end of Q2[71]. All the critical input variables and assumptions necessary for savings calculations are present in the utility's tracking database. This review is conducted mid-year to help facilitate changes in the algorithm applications before the end of the year, where they might cause discrepancies in reported versus verified savings. After the measure-level review, the EM&V team verified energy savings calculations for engineering fundamentals, appropriateness, and accuracy.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system were consistent with the savings outlined in TRM 9.2 used to estimate project savings. Third, it assessed the tracking system's ability to support future evaluation needs.

Table 138. Large Commercial and Industrial Solutions—PY2024 Q1–Q2 Tracking System Reported Energy Savings by Measure Category

Measure	Reported savings	
	kW	kWh
Compressed air	82.6	490,007
Domestic hot water	18.0	56,140
Envelope	76.9	1,869,448
HVAC	4.0	252,612
Lighting	522.1	3,293,039
Lighting—new construction	1,006.9	8,436,202
Motors	9.9	84,431
Other	100.2	884,358

[71] Tracking data downloaded July 10, 2024.

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Measure	Reported savings	
	kW	kWh
Refrigeration	103.7	909,812
Total evaluated	**1,924.2**	**16,276,048**
Tune-up and commercial Wi-Fi thermostat[72]	136.5	577,369
Custom HVAC[73]	4,825.4	787,451
Custom other[73]	134.1	36,448,370
Total	**7,020.1**	**54,089,238**

9.3.1.2 Tune-Up and Commercial Wi-Fi Thermostat Measurement and Verification Review

The EM&V team reviewed all the *tune-up* and *commercial Wi-Fi thermostat* measures with a comprehensive tracking system review, supplemented with engineering reviews of the M&V and deemed savings methodologies. These measures are tracked in ArchEE but have supplemental data in external databases necessary for evaluation. The tracking system reviews focused on replicating individual measure savings results and determining population variances.

9.3.1.3 Desk Reviews and Site Visits

The optimal count of sample units for the *custom*, *lighting*, and *other* strata were determined based on PY2021 through BY2023 savings representation for each stratum. These savings were compared against the savings in ArchEE quarterly to determine whether there was under- or over-representation of specific measure categories occurring compared to past years.

The sampling plan for *lighting* accounted for the differences between fully deemed lighting projects and those using custom hours of use. For the whole population, *lighting* projects were considered deemed if all measures for a project were using the deemed value for annual operating hours (AOH) that is consistent with the building type as defined in ArchEE. For projects with any measure that uses AOH that is not consistent with the building type, the entire project is considered *non-deemed*. For *lighting*, this is the classification process:

1. Projects were divided into *deemed* and *non-deemed* based on whether all measures used AOH that matched their building type in the tracking system (deemed) or any measure deviated from that value (non-deemed).

2. The contribution of energy savings for both strata is examined. The base strategy is to oversample the non-deemed projects so that at 50 percent energy savings, twice as many non-deemed projects will be chosen. The amounts are then adjusted up or down for each program based on the actual percentage of energy savings for non-deemed compared to the whole population.

[72] *Tune-up*, and *commercial Wi-Fi thermostat* measures are evaluated through a separate tracking system and an M&V data review at the close of the program year.
[73] The algorithms and key input assumptions for *custom* measures are not provided within the tracking system; therefore, a review of those measures was not completed as part of the tracking system data review. However, they are analyzed as part of the engineering desk reviews and on-site visits.

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In addition to the sub-strata for *lighting* projects, three sub-strata for *custom* projects were defined. The first sub-strata divides projects by whether they went through the *Early Engagement for High Profile Projects* protocol; if projects went through the protocol, they were assigned to the *early review* sub-strata. Non-*early review CEI* projects were assigned to the *CEI* sub-strata. Finally, the remaining projects are assigned to the *other* sub-strata. The contribution of savings was used to determine the number of sample points for each sub-strata, with a higher weighting for *other*, a standard weighting for *CEI*, and a lower weighting for *early review*.

The site visits were nested selections of the desk reviews, meaning that all projects receiving a site visit assessment also received a desk review. Projects with variances that could be cleared up during the site visit were prioritized first, with the remaining site visits randomly selected from within the desk review sample. Table 139 summarizes the result of the sampling for Large C&I Solutions.

Table 139. Large Commercial and Industrial Solutions—Summary of Sampled Savings

Sampling strata	Projects	Projects sampled[74]	Site visits sampled	Reported kWh	Reported kW
Custom					
CEI	33	22	0	34,184,670	4,355.9
Early review	7	5	2	8,293,761	961.9
Other	49	16	12	1,849,406	270.8
Custom subtotal	**78**	**43**	**14**	**44,327,837**	**5,588.6**
Lighting					
Deemed	151	15	6	878,690	153.2
Non-deemed	11	6	6	4,500,947	506.4
Lighting subtotal	**162**	**21**	**12**	**5,379,638**	**659.6**
Other subtotal	**133**	**14**	**10**	**288,089**	**15.7**
Total	**321**	**70**	**30**	**49,995,563**	**6,263.9**

9.3.2 Early Engagement on High-Profile Projects

Based on the discussion between the EM&V team and CLEAResult, the protocol outlined below was developed to address savings verification risk for high-energy-saving projects, clarify baseline data and assumptions, and foster site-specific project savings calculations. The protocol describes how program implementers can provide the EM&V team with project savings calculations and other documentation to develop final program-saving results for the project. The collaboration could occur either in advance of offering *custom* incentives or after a completed project is made ready for payment and close-out.

[74] Eight sampled projects had measures in multiple categories.

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Projects meeting either one of the following criteria were considered good candidates for review:

- Calculated savings for an individual measure is 500,000 kWh or greater. For projects meeting this savings threshold, an EM&V team review is required. NEBs are expected to be estimated in parallel with energy savings calculations for the EM&V team review. An exception is allowed for projects where the EM&V team has reviewed the project savings methodology, and no adjustments were made for future savings claims.
- *Custom* projects that are expected to save less than 500,000 kWh, but CLEAResult would like to collaborate on savings approaches or arrive at an agreement on calculation methods or results with the EM&V team. Situations that may warrant such a review include:
    - the calculations are statistically anomalous or otherwise present an outlier from typical practices or outcomes,
    - NEB calculations and their treatment for the specific project,
    - the calculations or data collection utilize uncommon or unproven methods, and
    - the calculation methods used for savings will deviate substantially from the methods outlined in the M&V plan.

During PY2024, the program implementer submitted twelve projects under the *Early Engagement for High Profile Projects* protocol. Based on the individual submission, the EM&V team provided review comments on detailed calculations, white papers, or M&V plans for these projects. In most cases, the implementer brought final, or nearly final, savings estimates to the EM&V team for review. The implementer subsequently claimed eleven of these *early reviews* with 12,506 MWh of annual energy savings, representing 12 percent of the program savings. This represented a decrease from 28 percent of annual energy savings reviewed in BY2023.

Five of these projects were subsequently selected for engineering desk reviews or site visits by the EM&V team, resulting in two savings adjustments. Further, the EM&V team noticed a trickledown effect with guidance from large projects informing savings estimations for small projects, combining to create an overall evaluation with fewer savings adjustments and fewer findings and recommendations than in previous evaluation cycles. Beginning with PY2022, the EM&V team and CLEAResult agreed to relax the protocol—particularly for *CEI* projects—where additional savings claims were made, and the regression models had already been reviewed. The relaxed protocol did not affect the accuracy of the savings results for PY2024.

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9.3.3 Evaluated Savings Methodology by Measure

The EM&V team referred to relevant sections in TRM 9.2, Volume 2, to utilize the prescriptive algorithms for calculating energy and demand impacts for a significant portion of the program's measures, including *compressed air*, *domestic hot water*, *envelope*, *HVAC*, *lighting*, *motors*, and *refrigeration* measures. The program implementer tracks the savings type for each measure as either *deemed*, *measured,* or *stipulated*[75].

- *Deemed* savings measures are prescriptive measures from TRM 9.2 and use all or most of the default assumptions of the TRM 9.2 methodology, such as the baseline flow rate of a *faucet aerator* or the AOH for *lighting* measures.
- *Measured* savings measures are either *custom* or *prescriptive* measures from TRM 9.2 that use site-specific information collected as part of the implementation process, such as field-monitored data or measured results for some or all the assumptions of TRM 9.2 methodology. An example would be capturing the actual average baseline flow rate of a *pre-rinse spray valve* or a *custom compressor* project.
- *Stipulated* savings measures are *custom* or *prescriptive* measures from TRM 9.2 that use site-specific information captured from the participant for key assumptions of the TRM 9.2 methodology; they are not based on metered or measured data such as self-reported AOH for *lighting* measures.

In addition, the program included a significant number of *custom* projects for which site-specific data were gathered and industry-standard practices were applied; however, assumptions were expected to vary based on site-specific documented conditions. As noted above, *custom* measures were described as either *measured* or *stipulated* savings types.

The ArchEE tracking system was the primary source for key input assumptions into the savings algorithms to review the tracking system savings and evaluate *prescriptive* projects. The tracking system contained the key assumptions and parameters necessary for calculating measure savings for a census of *prescriptive* measure savings. As *custom* measures were not tracked with enough detail to perform similar savings calculations on the information within the tracking data alone, the EM&V team relied on engineering desk reviews and on-site visits to review *custom* measures. During the engineering desk reviews, the project documentation for individual applications was the primary source of information to verify these key input assumptions and complete the project-level savings analysis. Site-specific information gathered during the on-site visits was the primary source of information to confirm key input assumptions and complete the project-level savings analysis.

A further discussion of the source of the values for key input parameters needed for calculating measure-level impacts used by the EM&V team for evaluating each of the *prescriptive* measures is presented next.

[75] The implementer's definition of *stipulated* differs from the definition provided in the TRM. The tracking system definition of *stipulated* is a project that relies on TRM methodology for the savings calculation but substitutes *custom* parameters for some of the inputs. In particular, *lighting* projects that use *custom* AOH values are tracked as *stipulated*.

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9.3.3.1 Compressed Air Measures

Compressed air measures in PY2024 included *compressor replacement, no loss condensate drains*, and *system pressure reduction*.

The EM&V team analyzed the savings from *compressed air* measures using the data for all key input variables needed for calculating energy and demand savings per the prescriptive algorithms of TRM 9.2 (Sections 3.8.1, 3.8.2, and 3.8.4). The key input variables of the baseline and post-retrofit conditions include (1) rated horsepower, (2) AOH, (3) modulation control type, (4) system pressure, and (5) compressor type.

For the *compressed air* measures, the claimed savings tracked, either directly or indirectly, the TRM 9.2 deemed values derived from these parameters. The EM&V team verified the parameters from available project documentation and on-site inspections, making adjustments where warranted. Compressor nameplate or Compressed Air and Gas Institute (CAGI) datasheets verified the rated horsepower compressor type, and modulation control. AOHs were assessed through an inspection of the customer's business hours or an on-site inspection. System pressure was verified through control system documentation or an on-site inspection.

9.3.3.2 Domestic Hot Water Measures

Domestic hot water measures in PY2024 included the retrofit of existing operational faucets and showerheads with new, more efficient *low-flow faucet aerators* and *showerheads*.

The EM&V team analyzed the savings from *domestic hot water* measures using the data for all key input variables needed for calculating energy and demand savings per the *prescriptive* algorithms of TRM 9.2 (Sections 3.3.2, and 3.3.5). The key input variables of the baseline and post-retrofit fixture include (1) average flow rate, (2) operating days per year, (3) average supply water temperature, (4) average mixed water temperature, (5) water usage duration, (6) and water heater thermal efficiency; and for the demand savings, (7) the fraction of hourly water consumption.

For the *domestic hot water* measures, the claimed savings assumed the TRM 9.2 deemed values for all these parameters except for the post-retrofit *faucet aerators*' average flow rate. Therefore, the EM&V team also used the TRM 9.2 values for all key input parameters except the post-retrofit fixture flow rates. The EM&V team verified the pre- and post-retrofit fixture average flow rate via on-site visits, manufacturer cut sheets, or web-based research of make and model numbers. If the EM&V team could not determine the pre- and post-retrofit fixture average flow rates using these sources, the EM&V team used the default values specified in TRM 9.2. The *water heater type*, *building type*, and *food service operation* selections guide the key input assumptions for water heater thermal efficiency, operating days per year, and water usage durations. These data were assessed during on-site visits or based on the information provided in the tracking data or project-level backup documentation.

9.3.3.3 Envelope Measures

Envelope measures in PY2024 included the installation of *commercial door air infiltration* measures. These entailed installing *weather stripping* and *door sweeps* on exterior-facing doors to reduce infiltration of unconditioned air into a conditioned space.

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The EM&V team analyzed the savings from *commercial door air infiltration* measures using the data for all key input variables needed for calculating energy and demand savings per the prescriptive algorithms of TRM 9.2 (Section 3.2.10). The key input variables of the baseline and post-retrofit door include (1) pre-retrofit air infiltration rate, (2) the percentage of reduction of the post-retrofit air infiltration rate, (3) change in temperature across the gap barrier, (4) daytime hours per year, (5) nighttime hours per year, (6) water heater thermal efficiency, (6) heating coefficient of performance, (7) width of the gap, (8) length of the gap, and (9) weather zone of the location; and for the demand savings, (10) the average cooling equivalent full-load hours.

For the *envelope* measures, the claimed savings assumed the TRM 9.2 deemed values for all these parameters except for the two required to be site-specified: the gap width and length. Therefore, the EM&V team used the TRM 9.2 values for all key input parameters, and the site captured gap widths and lengths. The EM&V team verified the *weather stripping* and *door sweep* gaps and lengths during on-site visits, and the re-calculation of these measurements captured on contractor inventories taken at the retrofit time was documented within the project files. If the EM&V team could not determine the gap or length using these sources, the EM&V team assumed these parameter details within the ArchEE tracking data to be accurate. The *air conditioning and heating system* types, which guide the key input assumptions for cooling, heating, and HVAC AOH, were assessed during on-site visits or based on the information provided in tracking data project-level backup documentation.

9.3.3.4 Heating, Ventilating, and Air-Conditioning Measures

HVAC measures in PY2024 included replace-on-burnout projects for *packaged terminal air conditioning (PTAC)* and *heat pumps*, *unitary and split air conditioning* and *heat pumps*, and *air-* and *water-cooled chillers*.

The EM&V team analyzed the replacement-on-burnout savings from *HVAC* measures using the data for all key input variables needed for calculating energy and demand savings per the prescriptive algorithms of TRM 9.2 (Sections 3.1.14, 3.1.16, and 3.1.17). The key input variables that represent the baseline and post-retrofit unit conditions include (1) equipment type of the new unit, (2) rated capacity of the new unit, (3) sub-category type of the new unit, (4) full-load efficiency of the new unit, (5) part-load efficiency of the new unit, (6) equivalent full-load hours for cooling, and (7) the coincidence factor (CF) for demand savings.

For the *HVAC* measures, the claimed savings assumed the TRM 9.2 deemed values for all these parameters except for the new units' capacity and full-/part-load efficiencies for equipment replacement. Therefore, the EM&V team also used the TRM 9.2 deemed values for all key input parameters except the post-retrofit unit capacity and efficiency. The EM&V team verified the post-retrofit unit's capacity and efficiencies via on-site visits, manufacturer cut sheets, or web-based research of make and model numbers. The deemed *building type* selections, *facility area,* and *controller settings*, which guide the key input assumptions for AOH and CFs, were assessed during on-site visits or based on the information provided as part of project-level backup documentation.

9.3.3.5 Lighting and Lighting Controls Measures

Lighting and *lighting controls* measures in PY2024 included retrofit and new construction projects installing lamps, fixtures, and lighting controls.

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The EM&V team analyzed the savings from *lighting* and *lighting controls* measures using the data for all key input variables needed for calculating energy and demand savings per the prescriptive algorithms in TRM 9.2 (Sections 3.6.2 and 3.6.3). The key input variables of the baseline and post-retrofit lighting and controls include (1) pre- and post-retrofit quantity of lighting, (2) rated wattage of the pre- and post-retrofit lighting, (3) AOH for the specified building type, (4) interactive effects factors for energy savings for the specified heating type, (5) power adjustment factor for specified control type and the demand savings, (6) the peak demand CF for the specified building type, and (7) the controls peak-demand CF.

For the *lighting* measures, the claimed savings assumed the TRM 9.2 deemed values for interactive effects factors, power adjustment factors, and AOH and CF based on the site-based details that inform them. The site-captured details were used as the basis for the other key input values to the deemed algorithms. Therefore, the EM&V team also used TRM 9.2 deemed values for all key input parameters except the site-captured information informing the deemed savings algorithm calculations. The EM&V team verified the pre- and post-retrofit *equipment quantity*, *type*, *wattage*, and *building type* during on-site visits and reviewed project-level inventories with these details captured by trade allies. The EM&V team was able to determine the pre- and post-retrofit parameters using these sources. The deemed *building type* selections, which guide the key input assumptions for AOH and CFs, were assessed during on-site visits or based on the information provided as part of project-level backup documentation.

9.3.3.6 Motors Measures

Motors measures in PY2024 included the installation of *premium efficiency motors,* and the installation of *electronically commutated motors* (*ECM*).

The EM&V team analyzed the savings from *motors* measures using the data for all key input variables needed for calculating energy and demand savings per the *prescriptive* algorithms of TRM 9.2 (Sections 3.4.1, and 3.4.2). These measures' energy and demand savings are deemed based on a few key variables of the existing unit size, type, and location. For *ECMs,* the deemed savings is based on (1) installed motor wattage, (2) baseline motor wattage, (3) hours of operation, (4) coefficient of performance for cooler/freezer, and (5) duty cycle of the cooler/freezer. For *premium efficiency motors*, the deemed savings is based on (1) rated horsepower, (2) load factor, (3) baseline and post-efficiency of motors, and (4) AOH.

For the *ECMs*, the claimed savings assumed the TRM 9.2 deemed values for all these parameters except for the pre- and post-installation motor wattage. In contrast, other parameters were determined from site-specific data. If site-specific motor information was not available, the EM&V team used the default parameters from the TRM. The deemed building type selections, which guide the key input assumptions for operating hours per year and CFs, were assessed during on-site visits or based on the information provided as part of project-level backup documentation.

For *premium efficiency motors*, the claimed savings assumed the TRM 9.2 deemed values for all these parameters except for the post-installation motor efficiency and rated horsepower. The AOH and load factors were deemed based on the building type. Site-specific parameters were gathered for the rated horsepower and post-installation efficiency. These parameters were assessed from the documentation, during desk reviews, and verified during on-site inspections.

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9.3.3.7 Other Measures

Other measures in PY2024 included the installation of *high-efficiency battery chargers*.

The EM&V team analyzed the savings from these measures using the data for all key input variables needed for calculating energy and demand savings per the *prescriptive* algorithms of TRM 9.2 (Section 3.9.6). The key input variables of the baseline and post-retrofit battery charger include the (1) type of equipment, (2) pre- and post-wattage draw of the charging equipment when charging, (2) pre- and post-wattage draw of the charging equipment when idle, and (3) annual charging hours per charger.

For the *high-efficiency battery charger* measure, the claimed savings assumed the TRM 9.2 deemed values for wattage draw and operating hours based on the equipment phase type (i.e., single-phase or three-phase). The site-captured details were used as the basis for the input values for the deemed algorithms. Therefore, the EM&V team also used TRM 9.2 deemed values for all key input parameters except the site-captured information informing the deemed savings algorithm calculations. The EM&V team verified the pre- and post-installed equipment quantity and type during on-site visits and reviewed project-level charging hour estimates. The equipment type selections that guide the key input assumptions for kilowatt-hours and kilowatts per year were assessed during on-site visits or based on the information provided in project-level backup documentation.

9.3.3.8 Refrigeration Measures

Refrigeration measures in PY2024 included the retrofit of refrigerated areas with the installation of *door gaskets* and *strip curtains,* and the installation of *evaporator fan controls*.

The EM&V team analyzed the savings from *refrigeration* measures using the data for all key input variables needed for calculating energy and demand savings per the *prescriptive* algorithms of TRM 9.2 (Sections 3.5.6, 3.5.7, and 3.5.9). These measures' energy and demand savings are deemed based on a few key variables of the existing unit size, type, and location. For *strip curtains*, the deemed savings are based on four main variables: (1) savings per size (area) of the opening where the curtain is installed, (2) case type/temperature, (3) building type (e.g., supermarket, convenience store), and (4) whether a pre-existing curtain was in place (i.e., yes, no, unknown). For *door gaskets*, the deemed savings are based on two main variables: (1) savings per size (length) of the gasket installed and (2) case type/temperature. For *evaporator fan controls,* the deemed savings are based on (1) the nameplate connected load of the evaporator fan motor, (2) the nameplate connected load of the circulator fan, (3) the number of evaporator fans, and (4) the cooler or freezer type.

For the *refrigeration* measures, the claimed savings assumed the TRM 9.2 deemed values for all these parameters except for the *refrigerator case/door size*, *refrigerator temperature*, *weather zone*, *building type*, *evaporator fan load*, and *circulating fan load* as those are site-determined parameters. Therefore, the EM&V team also used the TRM 9.2 deemed values for all key input parameters except the site-captured information informing the deemed savings selections. During on-site visits, the EM&V team verified the post-retrofit *door size*, *refrigerator temperature*, *weather zone*, *building type*, *evaporator fan load*, and *circulating fan load* and reviewed project-level inventories with these details captured by trade allies. The EM&V team was able to determine the post-retrofit parameters using these sources. The deemed building type selections, which guide the key input assumptions for AOH and CFs, were assessed during on-site visits or based on the information provided as part of project-level backup documentation.

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9.3.4 Process Evaluation

9.3.4.1 Participant Survey

The participant survey was used to inform the program's NTG and process evaluations based on the guidance outlined in the Arkansas TRM Version 9.2 Volume 1 EM&V Protocols. For the NTG evaluation, the survey included a series of questions to estimate free-ridership and spillover for program participants. The participant survey investigated sources of awareness and preferred methods of communication, participation experiences, program satisfaction, and firmographics to help inform the process evaluation.

As the Arkansas TRM does not call for *partial* free riders, respondents were classified as *full* free riders (100 percent free-ridership) or *non-free* riders (zero percent free-ridership) based on their responses to key decision-making questions. For consistency and comparability with prior evaluation results, we used the same criteria for classifying free riders as used in previous evaluation research for EAL and this program. To be classified as a *full* free rider, respondents must indicate all the following conditions; any respondent who does not meet all three of these conditions is classified as a *non-free* rider:

- they were already planning to purchase and install the project in the same year before learning about the program (F3 = 1),
- their budget would have accommodated the full cost of the project in the absence of the program incentive (F4 = 1), and
- they would have purchased the same or higher efficiency project within one year in the absence of the program ((F5 = 1 OR (F7 = 1 OR 2)) AND (F8 = 1 OR 2)).

To assess participant spillover, the survey asked about recent installations since the program participation of any additional energy-efficient equipment that was made *without* any financial assistance from EAL. We used a conservative approach and quantified spillover only for measures of the same type as those installed through the program (referred to as *like* spillover). The survey also included a series of questions to investigate evidence of *unlike* spillover; however, unlike-spillover is not included in the quantitative spillover estimate due to the issues surrounding the accuracy of quantifying savings from these measures through customer self-reports.

We assessed free-ridership or spillover rates for each respondent at the measure category level. Individual free-ridership and spillover rates were then weighted to adjust for proportional sampling differences, non-response, and gross savings to calculate overall estimates representative of the program population.

9.3.4.1.1 Sampling Methodology

Where possible, the Arkansas TRM recommends using a staggered data collection approach to collect free-ridership and spillover information to inform the NTG analysis. Free-ridership is best assessed as close as possible to participation, while spillover is best assessed after a reasonable amount of time has passed since participation. This rationale is especially pertinent in the C&I sector, where decision-making processes are typically more complex and involve longer lead times than in the residential sector.

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With these considerations in mind, the participant survey sample frame consisted of customers who completed projects through the program between January 2023 and June 2024[76], stratified into three six-month participation periods. To limit the potential for recall issues, only participants in the last 12 months (July 2019–June 2020) were asked free-ridership questions and included in the free-ridership assessment. All participants surveyed dating back to January 2023 were asked spillover questions, allowing more time for potential spillover effects.

To limit the respondent burden and the potential for project confusion, we sampled one measure-category-level project per customer for the free-ridership and *like* spillover assessments. To do this, we first assigned specific measures[77] tracked within ArchEE to measure categories for use in the survey. We then aggregated the tracking data to the measure category and project level[78], summing quantities, incentive levels, and kilowatt-hour savings. We also aggregated detailed measure descriptions and retained them for reference in the survey. Customer information was retained for each project to identify customers responsible for multiple projects. The table below summarizes the number of projects and total reported savings in the survey population by participation period and type of measure.

Table 140. Large Commercial and Industrial Solutions—Participant Summary (Jan 2023–Jul 2024)

Participation period	Program (Large C&I or CoolSaver)	Measure type	Project type	Count of accounts in the population	Reported (ex-ante) kWh
Jan 2023−Jun 2023	Large C&I	Compressed air	Prescriptive	1	80,395
		Custom HVAC	Custom	5	412,323
		Custom other	Custom	21	9,096,024
		Domestic hot water	Prescriptive	3	41,683
		Envelope	Prescriptive	15	1,686,604
		HVAC	Prescriptive	8	501,206
		Lighting	Prescriptive	75	9,346,436
		Lighting−new construction	Prescriptive	10	2,409,779
		Refrigeration	Prescriptive	14	95,336
		Total		**152**	**23,669,786**
	CoolSaver	HVAC tune-ups	Prescriptive	13	505,549
		Wi-Fi thermostats	Prescriptive	14	1,154,332
		Total		**27**	**1,659,881**
	Total			**179**	**25,329,667**

[76] Project dates were identified using the ArchEE database field *InstallationDate*.
[77] Measures were identified using the ArchEE database field *MeasureDesc*.
[78] A unique project was identified using the ArchEE database field *JobNo*.

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Participation period	Program (Large C&I or CoolSaver)	Measure type	Project type	Count of accounts in the population	Reported (ex-ante) kWh
Jul 2023–Dec 2023	Large C&I	Compressed air	Prescriptive	2	149,158
		Custom HVAC	Custom	2	463,555
		Custom other	Custom	27	22,358,427
		Envelope	Prescriptive	20	1,890,542
		HVAC	Prescriptive	10	44,871
		Lighting	Prescriptive	52	4,782,687
		Lighting–new construction	Prescriptive	24	4,688,885
		Motors	Prescriptive	1	2,064
		Other	Prescriptive	1	22,248
		Refrigeration	Prescriptive	1	6,818
		Total		**140**	**34,409,255**
	CoolSaver	HVAC tune-ups	Prescriptive	10	813,759
		Wi-Fi thermostats	Prescriptive	2	97,721
		Total		**12**	**911,480**
	Total			**152**	**35,320,736**
Jan 2024–Jun 2024	Large C&I	Compressed air	Prescriptive	8	533,464
		Custom HVAC	Custom	7	799,683
		Custom other	Custom	13	2,701,940
		Domestic hot water	Prescriptive	6	56,974
		Envelope	Prescriptive	38	2,208,664
		HVAC	Prescriptive	12	242,839
		Lighting	Prescriptive	35	3,232,823
		Lighting–new construction	Prescriptive	25	8,351,335
		Other	Prescriptive	1	884,358
		Refrigeration	Prescriptive	22	994,909
		Total		**167**	**20,006,989**
	CoolSaver	HVAC tune-ups	Prescriptive	14	244,428
		Wi-Fi thermostats	Prescriptive	4	372,082
		Total		**18**	**616,510**
	Total			**185**	**20,623,498**

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In addition to the participation period, we further stratified the survey sample by project type (i.e., *custom*, *prescriptive*) due to the differences in average project size, complexity, and level of program engagement between custom versus prescriptive projects. We drew a random sample of projects within each stratum (limiting to one project per customer), sufficient to complete the targeted number of surveys in each stratum with an assumption of a 15 percent response rate. The table below summarizes our sampling plan, including population counts and savings, the target number of survey completes, and the survey questions for each stratum.

Table 141. Large Commercial and Industrial Solutions—NTG/Process Participant Survey Sample Plan

Participation period	Program	Project type	Count of account numbers in population*	Count of measures in population	Reported (ex-ante) kWh	Target completed surveys**	Survey questions		
							Free-ridership	Spillover	Process
Jan 2023–Jun 2023	Large C&I	Custom	26	34	9,508,347	12	✘	✓	✓
		Prescriptive	126	135	14,161,439	12			
		Total	**152**	**169**	**23,669,786**	**24**			
	CoolSaver	Custom	N/A	N/A	N/A	0			
		Prescriptive	27	328	1,659,881	23			
		Total	**27**	**328**	**1,659,881**	**23**			
Jul 2023–Dec 2023	Large C&I	Custom	29	35	22,821,982	12	✓	✓	✓
		Prescriptive	111	115	11,587,273	12			
		Total	**140**	**150**	**34,409,255**	**24**			
	CoolSaver	Custom	N/A	N/A	N/A	0			
		Prescriptive	12	91	911,480	23			
		Total	**12**	**91**	**911,480**	**23**			
Jan 2024–Jun 2024	Large C&I	Custom	20	24	3,501,623	12	✓	✓	✓
		Prescriptive	147	155	16,505,366	12			
		Total	**167**	**179**	**20,006,989**	**24**			
	CoolSaver	Custom	N/A	N/A	N/A	0			
		Prescriptive	18	122	616,510	23			
		Total	**18**	**122**	**616,510**	**23**			
Total			**1,039**	**516**	**81,273,901**	**141**			

*Aggregated by *Account_Number* and measure category.
**Completed surveys are at the measure level. Actual number of completed surveys will depend on the level of response.

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Tetra Tech's in-house Survey Research Center (SRC) implemented the participant survey via computer-assisted telephone interviews (CATI). The survey averaged 12 minutes. The table below shows the response rate we achieved by participation period.

Table 142. Large Commercial and Industrial Solutions—Participant Survey Response Rate

Disposition	CoolSaver	Non-CoolSaver	Overall
Sample	**41**	**361**	**402**
Business/Residential line	0	0	0
Not a utility customer	0	0	0
Affiliated with utility	0	0	0
Eligible sample	**41**	**361**	**402**
Does not recall participating	1	15	16
Refusal	2	13	15
Incompletes (partial surveys)	1	0	1
Language barrier	0	0	0
Bad number	1	7	8
Called out	0	0	0
Attempted but not completed	21	218	239
Completes (surveys)	**15**	**108**	**123**
Completed measures	21	158	179
Response rate			
Response rate (completed/eligible sample)	**36.6%**	**29.9%**	**30.6%**

9.3.4.2 Market Actor Interviews

The market actor interviews informed the NTG and process evaluations of the program based on the guidance outlined in the Arkansas TRM Version 9.2 EM&V Protocols. For the NTG evaluation, the interviews included a series of questions to support the free-ridership and spillover results from the participant survey. The interviews aimed to understand trade ally experiences with the program and program satisfaction through the process evaluation.

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9.3.4.2.1 Sampling Methodology

The Large C&I contractors' sample was pulled from a list of projects between January 2023 and June 2024.[79] Within that list, there were 72 contractors to sample. The two contractors removed from sampling were the implementor, CLEAResult, and "Self Installed." The contractors were then broken into three categories by the number of jobs they conducted, as identified by unique account numbers. These categories were contractors with less than 5 account numbers, those between 5 and 14 account numbers, and those with 15 or more. We also identified the contractors who participated in CoolSaver measures. A random sample was taken from each group, except for those with 20 or more job IDs. There was only a population of 4, and we used all of them, resulting in a sample of 30 contractors. This included all six of the CoolSaver contractors.

9.3.5 Net-to-Gross Approach

NTG was assessed via self-reports through the participant customer survey based on the guidance outlined in Protocol F of the Arkansas TRM Version 9.2. Also consistent with Protocol F, the participant survey results were triangulated with the trade ally interviews, which also reported a high level of program influence.

The sample frame consisted of customers who completed projects through the program between January 2023 and June 2024,[80] stratified into three six-month participation periods. Only participants in the last 12 months (July 2023–June 2024) were asked free-ridership questions and included in the free-ridership assessment to limit the potential for recall issues. All participants surveyed dating back to January 2023 were asked spillover questions, allowing more time for potential spillover effects.

In addition to the participation period, we further stratified the survey sample by type of project (i.e., custom, prescriptive and CoolSaver, non-CoolSaver) due to the differences in average project size, complexity, and level of program engagement between custom versus prescriptive projects. The EM&V team randomly sampled projects within each stratum (limiting to one project per customer) sufficient to complete the targeted number of surveys in each stratum.

9.4 DETAILED IMPACT EVALUATION RESULTS

Large C&I Solutions' evaluated energy savings were lower than the reported savings (99.6 percent kilowatt-hour realization rate) and evaluated demand savings were higher than the reported savings (104.3 percent kilowatt realization rate). The overall realization rates were affected most by variances between the claimed and evaluated savings for *custom-other* (for kilowatt-hour savings) and *other* and *CEI* (for kilowatt savings) measures. *Custom—other* had adjustments resulting from a transcription error on HVAC efficiencies, and a methodology change for *VFDs* to *ECMs*. *Other* measures had adjustments for HVAC baseline efficiencies that did not match the current federal standard. Finally, *CEI* projects had three projects with calculation errors.

[79] Project dates were identified using ArchEE database field *InstallationDate*.
[80] Project dates were identified using the ArchEE database field *InstallationDate*.

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Corrections to *CEI* projects that contributed to savings adjustments were due to:

- calculation error corrections, such as not including full ranges of data and using the same efficiency for different-sized units and
- demand savings not accounting for a coincident factor based on the operating schedule.

Corrections to *custom—other and custom—early* projects that contributed to savings adjustments were primarily due to:

- calculation error corrections, such as not including full ranges of data, or incorrectly transcribing values and
- *ECMs* installed instead of *VFDs*.

Corrections to *lighting* projects were primarily due to:

- installed fixture types, quantities, or input wattages being different from the project documentation, certifications, and site visits;
- calculations for some projects not matching the TRM algorithms; and
- deemed building type adjustments.

Corrections to *other* projects were due to:

- incorrect baseline full-load efficiencies used in calculating demand savings for multiple projects and
- motor efficiencies using default values when on-site inspection documentation included site-specific values.

Corrections to *tune-up* projects were primarily due to:

- savings calculations using an algorithm that differed from the unit configuration, such as using the air conditioning savings algorithm for a heat pump configuration.

9.4.1 Participant Characterization

The program provides several different measures to participants. Within the tracking system, qualifying products are assigned unique measure names. The mapping of these measure names to measure categories is provided below.

Table 143. Large Commercial and Industrial Solutions—Mapping to Measure Category

Measure description	Measure category
Compressor replacement	Compressed air
No loss condensate drains	Compressed air
System pressure reduction	Compressed air
Continuous energy improvement	Continuous energy improvement
Core CEI participation payments	Continuous energy improvement
Custom - heating and cooling	Custom HVAC

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Measure description	Measure category
Custom controls	Custom HVAC
Custom - non-heating and cooling	Custom other
Variable frequency drives	Custom other
Commercial showerheads	Domestic hot water
Faucet aerators	Domestic hot water
Pre-rinse spray valves	Domestic hot water
Commercial door air infiltration	Envelope
Overhead door weather stripping	Envelope
Overhead door weather stripping for refrigerated spaces	Envelope
PTAC sealing	Envelope
Packaged terminal HP (PTHP) equipment - replace on burnout	HVAC
Unitary AC equipment - unitary AC < 65,000 Btuh - replace on burnout	HVAC
Unitary AC equipment - unitary AC ≥ 65,000 Btuh - replace on burnout	HVAC
Unitary HP equipment - heat pump < 65,000 Btuh - replace on burnout	HVAC
Unitary HP equipment - heat pump ≥ 65,000 Btuh - replace on burnout	HVAC
Water chilling equipment (air-cooled) - replace on burnout	HVAC
Water chilling equipment (water-cooled centrifugal) - replace on burnout	HVAC
Halogens	Lighting
HIDs	Lighting
Integrated-ballast compact fluorescent lamps (CFL)	Lighting
integrated-ballast LED lamps	Lighting
LEDs	Lighting
Lighting controls	Lighting
Magnetic-ballast T5 or premium T8 retrofit of T12	Lighting
Modular CFLs and CCFLs	Lighting
Other linear fluorescents	Lighting
Outdoor-halogens	Lighting
Outdoor-HIDs	Lighting
Outdoor-integrated-ballast compact fluorescent lamps (CFL)	Lighting
Outdoor-integrated-ballast LED lamps	Lighting
Outdoor-LEDs	Lighting

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Measure description	Measure category
Outdoor-modular CFLs and CCFLs	Lighting
Outdoor-other linear fluorescents	Lighting
NC-integrated-ballast LED lamps	Lighting-new construction
NC-interior project savings	Lighting-new construction
NC-LEDs	Lighting-new construction
NC-lighting controls	Lighting-new construction
Outdoor-NC-integrated-ballast LED lamps	Lighting-new construction
Outdoor-NC-LEDs	Lighting-new construction
Outdoor-NC-lighting project savings	Lighting-new construction
Electronically commutated motors for refrigeration	Motors
Premium efficiency motors (replace on burnout)	Motors
High efficiency battery chargers	Other
Evaporator fan controls	Refrigeration
Refrigeration door gaskets	Refrigeration
Refrigeration strip curtains	Refrigeration
Commercial AC post-test out	Tune-up
Commercial AC pre-clean	Tune-up
Commercial central air conditioner (tune-up)	Tune-up
Commercial heat pump (tune-up)	Tune-up
Commercial HP post-test out	Tune-up
Commercial HP pre-clean	Tune-up
Commercial Wi-Fi thermostat	Tune-up

Table 144 below outlines the claimed number of program participants and the percentage of savings by measure category in PY2024. *CEI* and *custom—other* were the dominant measure categories in PY2024, accounting for 73 percent of claimed demand (kilowatt) and 69 percent of energy (kilowatt-hour) savings. *Lighting* and *lighting—new construction* accounted for 19 percent of claimed demand and 22 percent of energy savings.

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Table 144. Large Commercial and Industrial Solutions—PY2024 Reported Participation and Savings by Measure Category

Measure category	Participants[81]	Projects[81]	Program savings		Percentage of program savings	
			kW	kWh	kW	kWh
Compressed air	12	13	153.5	1,092,697	0.9%	1.0%
Continuous energy improvement	34	51	9,410.3	54,423,016	57.4%	51.3%
Custom HVAC	17	18	282.8	1,880,278	1.7%	1.8%
Custom other	36	65	2,550.2	18,255,841	15.6%	17.2%
Domestic hot water	9	9	22.9	79,863	0.1%	<0.1%
Envelope	55	57	123.4	2,787,529	0.8%	2.6%
HVAC	30	30	26.5	911,315	0.2%	0.9%
Lighting	112	122	1,556.9	10,328,671	9.5%	9.7%
Lighting-new construction	50	51	1,556.8	12,895,262	9.5%	12.2%
Motors	20	20	22.5	194,683	0.1%	0.2%
Other	2	2	101.4	895,482	0.6%	0.8%
Refrigeration	21	21	106.9	937,357	0.7%	0.9%
Tune-up	54	355	476.7	1,449,243	2.9%	1.4%
Total	**371**	**774**	**16,390.9**	**106,131,237**	**100.0%**	**100.0%**

Table 145 outlines the savings and percentage of savings by measure in PY2024. *CEI* was the most significant measure in PY2024, accounting for 57 percent of claimed gross kilowatt savings and 51 percent of claimed gross kilowatt-hour savings. *Custom—non-heating and cooling* was the second most significant measure, accounting for 15 percent of claimed gross kilowatt and 16 percent of the claimed kilowatt-hour savings. *NC-interior project savings* were the third most significant measure with 9 percent of the kilowatt savings and 10 percent of the program kilowatt-hour savings.

[81] A participant is a unique account described by the ArchEE data field *AccountNumber*. A project is a unique job number defined by the ArchEE data field *JobId*. A participant may install measures across multiple measure categories and multiple projects. As a result, the total count of participants and projects may not equal the sum of the counts by measure category.

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Table 145. Large Commercial and Industrial Solutions—PY2024 Reported Participation and Savings by Measure

Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Compressed air				
Compressor replacement	128.3	915,427	0.8%	0.9%
No loss condensate drains	8.2	73,632	<0.1%	<0.1%
System pressure reduction	17.0	103,638	0.1%	<0.1%
Continuous energy improvement				
Continuous energy improvement	9,398.0	54,329,155	57.3%	51.2%
Core CEI participation payments	12.4	93,861	<0.1%	<0.1%
Custom HVAC				
Custom - heating and cooling	275.4	1,818,194	1.7%	1.7%
Custom controls	7.4	62,084	<0.1%	<0.1%
Custom other				
Custom - non-heating and cooling	2,414.9	17,338,739	14.7%	16.3%
Variable frequency drives	135.2	917,103	0.8%	0.9%
Domestic hot water				
Commercial showerheads	0.5	1,578	<0.1%	<0.1%
Faucet aerators	20.4	63,843	0.1%	<0.1%
Pre-rinse spray valves	2.0	14,441	<0.1%	<0.1%
Envelope				
Commercial door air infiltration	9.8	242,064	<0.1%	0.2%
Overhead door weather stripping	1.9	132,941	<0.1%	0.1%
Overhead door weather stripping for refrigerated spaces	50.2	439,595	0.3%	0.4%
PTAC sealing	61.5	1,972,929	0.4%	1.9%
HVAC				
Packaged terminal HP (PTHP) equipment - replace on burnout	0.1	345	<0.1%	<0.1%
Unitary AC equipment - unitary AC < 65,000 Btuh - replace on burnout	14.3	22,337	<0.1%	<0.1%
Unitary AC equipment - unitary AC ≥ 65,000 Btuh - replace on burnout	-2.8	207,852	<0.1%	0.2%

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Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Unitary HP equipment - heat pump < 65,000 Btuh - replace on burnout	23.5	97,345	0.1%	<0.1%
Unitary HP equipment - heat pump ≥ 65,000 Btuh - replace on burnout	10.1	89,088	<0.1%	<0.1%
Water chilling equipment (air-cooled) - replace on burnout	-32.1	74,060	<0.1%	<0.1%
Water chilling equipment (water-cooled centrifugal) - replace on burnout	13.4	420,288	<0.1%	0.4%
Lighting[82]				
Halogens	3.1	20,995	<0.1%	<0.1%
HIDs	2.4	14,034	<0.1%	<0.1%
Integrated-ballast compact fluorescent lamps (CFL)	0.1	324	<0.1%	<0.1%
integrated-ballast LED lamps	5.6	29,332	<0.1%	<0.1%
LEDs	1,471.4	9,035,703	9.0%	8.5%
Lighting controls	57.9	408,383	0.4%	0.4%
Magnetic-ballast T5 or premium T8 retrofit of T12	5.7	23,606	<0.1%	<0.1%
Modular CFLs and CCFLs	4.2	33,744	<0.1%	<0.1%
Other linear fluorescents	6.6	43,135	<0.1%	<0.1%
Outdoor-halogens	0.0	0	0.0%	0.0%
Outdoor-HIDs	0.0	0	0.0%	0.0%
Outdoor-integrated-ballast compact fluorescent lamps (CFL)	0.0	0	0.0%	0.0%
Outdoor-integrated-ballast LED lamps	0.0	1,618	0.0%	<0.1%
Outdoor-LEDs	0.0	717,796	0.0%	0.7%
Outdoor-modular CFLs and CCFLs	0.0	0	0.0%	0.0%
Outdoor-other linear fluorescents	0.0	0	0.0%	0.0%

[82] Some measures were identified in the tracking system data with no savings; these represent lighting included in *site lighting* inventories but were not incented by the program.

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Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Lighting-new construction[83]				
NC-integrated-ballast LED lamps	0.0	0	0.0%	0.0%
NC-interior project savings	1,530.7	10,661,491	9.3%	10.0%
NC-LEDs	0.0	0	0.0%	0.0%
NC-lighting controls	26.1	99,378	0.2%	<0.1%
Outdoor-NC-integrated-ballast LED lamps	0.0	0	0.0%	0.0%
Outdoor-NC-LEDs	0.0	0	0.0%	0.0%
Outdoor-NC-lighting project savings	0.0	2,134,393	0.0%	2.0%
Motors				
Electronically commutated motors for refrigeration	22.0	192,619	0.1%	0.2%
Premium efficiency motors (replace on burnout)	0.5	2,064	<0.1%	<0.1%
Other				
High efficiency battery chargers	101.4	895,482	0.6%	0.8%
Refrigeration				
Evaporator fan controls	0.5	4,450	<0.1%	<0.1%
Refrigeration door gaskets	53.9	473,447	0.3%	0.4%
Refrigeration strip curtains	52.4	459,459	0.3%	0.4%
Tune-up				
Commercial AC post-test out	34.1	73,131	0.2%	<0.1%
Commercial AC pre-clean	23.4	49,889	0.1%	<0.1%
Commercial central air conditioner (tune-up)	345.4	681,834	2.1%	0.6%
Commercial heat pump (tune-up)	4.6	16,880	<0.1%	<0.1%
Commercial HP post-test out	0.3	948	<0.1%	<0.1%
Commercial HP pre-clean	2.3	7,077	<0.1%	<0.1%
Commercial Wi-Fi thermostat	66.8	619,484	0.4%	0.6%
Total	**16,390.9**	**106,131,237**	**100.0%**	**100.0%**

[83] For *lighting-new construction* projects, all savings are tracked under project savings measure descriptions with the measure details tracked in the other descriptions, with the exception of *NC-lighting controls.*

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Table 146 shows the incentive structure for PY2024 compared to the previous program year. There were no changes to the incentives for PY2024 from BY2023.

Table 146. Large Commercial and Industrial Solutions—PY2024 Incentives

Measure			BY2023 incentive[84]	PY2024 incentive[85]
Directly installed by CLEAResult				
Domestic hot water				
Commercial showerheads			Full cost	Full cost
Faucet aerators			Full cost	Full cost
Pre-rinse spray valves			Full cost	Full cost
Envelope				
Commercial door air infiltration (i.e., weather stripping)			Full cost	Full cost
Lighting				
Integrated-ballast LED lamps			Full cost	Full cost
Outdoor—integrated-ballast LED lamps			Full cost	Full cost
Installed by trade ally				
PC power management			$0.10/kWh	$0.10/kWh
Gaskets and strip curtains			100 percent, contact program staff	Up to 100 percent, contact program staff
All other measures[86]	1 measure	2 measures	3 measures	4+ measures
BY2023 incentive[85]	**$0.14/kWh**	**$0.15/kWh**	**$0.16/kWh**	**$0.18/kWh**
PY2024 incentive[85]	**$0.14/kWh**	**$0.15/kWh**	**$0.16/kWh**	**$0.18/kWh**

9.4.2 Program Documentation and Tracking Data Review

To understand Large C&I Solutions, the EM&V team interviewed program staff and reviewed all information available on EAL's website related to the program and supplemental documentation provided by EAL and CLEAResult. The EM&V team received the following documentation related to the program:

- ArchEE data tracking system extract containing PY2024 participant information and savings;

[84] Source: 2022 Large Commercial & Industrial Program Manual, confirmed to be in use for BY2023.

[85] Source: 2024 Large Commercial & Industrial Program Manual.

[86] To qualify for an additional tier, an energy efficiency measure must exceed 30,000 kWh of savings. Measures can be grouped to meet the 30,000 kWh minimum threshold, but only one such grouping is allowed per customer. Direct-install measures only count as one measure tier. Retroactive incentives can be leveraged against other projects (up to the cap) back to January of the previous year.

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- supplemental project-level documentation received during quarterly data requests for sampled accounts, which typically included:
    - signed customer proposals and project agreements—sometimes files included initial and final proposals if projects had changed during development;
    - customer proposals that typically included a detailed inventory of site-captured measure-level details such as:
        - *Domestic hot water* measures (e.g., *low-flow faucet aerators, commercial showerheads, and low-flow showerheads*) were all directly installed by the implementer. A Direct Install Report typically inventoried the device and quantity installed by room. Additional notes typically included a flow rate as the new equipment may have had multiple flow rates (e.g., 0.5 gallons per minute (GPM), 1.0 GPM). Also, photo documentation of the water heater and its nameplate was provided. Details of the exact installed equipment flow rates were not included, and a specification of the new equipment was not provided.
        - The implementer directly installed *commercial door air infiltration* measures (e.g., *weather stripping, door sealing*). A Direct Install Report typically inventoried the device, quantity (by gap size), and new weather stripping length installed by room. Additional notes typically included the gap size as the new equipment may have been multiple widths (e.g., one-eighth inch, one-quarter inch) and the type (e.g., *weather stripping*, *door sweep*). Also, photo documentation of a sample of doors with the existing condition and gap noted by a view of a tape measure was provided. A clear description or documentation of the *HVAC type* was not included.
        - *HVAC* measures included new equipment type, make and model numbers, capacity, and quantity. Manufacturer specification sheets and Air Conditioning, Heating and Refrigeration Institute (AHRI) certificates were also provided.
        - *Lighting* and *lighting controls* measures included existing and new fixture types, make and model numbers, wattages, quantity, and control type. Also, DLC and ENERGY STAR certification sheets were typically provided for all models. Manufacturer specification sheets were generally not provided.
    - invoices;
    - pre- or post-inspection forms indicating field inspector's notes and results; and
    - photographic documentation pre- or post-installation;
- a Quality Control and Assurance Manual for EAL commercial programs, dated February 1, 2023; and
- the PY2024 Program Manual for Large C&I Solutions—obtained from the EAL website.

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9.4.2.1 Detailed Tracking System/Database Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review began with using TRM 9.2 as a reference in our review of measure-level savings assumptions. The EM&V team (1) reviewed the tracking system's linkage to TRM deemed savings and methods used to estimate savings and (2) verified energy-savings calculations for engineering fundamentals, appropriateness, and accuracy after the measure-level review.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system were consistent with the results of the savings algorithms as outlined in TRM 9.2. Third, it assessed the tracking system's ability to support quality assurance and quality control (QA/QC), including future evaluation needs.

The ArchEE tracking system, which supplied all participant data and claimed savings, and for the most part, all measure-level data for prescriptive-based measures, was used to check for systemic errors across a census of participants.

These results were informed and supplemented with the engineering desk reviews and site visit findings, as further outlined in Sections 9.4.4 and 9.4.5.

The overall Large C&I Solutions evaluated tracking system savings resulted in demand savings slightly greater (102.5 percent kilowatt realization rate) and energy savings slightly lower (99.6 percent kilowatt-hour realization rate) than those calculated by the program implementer. The evaluated savings were based on the results of adjustments made from completing engineering reviews of the program's tracking data. The overall realization rates were affected slightly by variances between the reported and evaluated savings (kilowatt and kilowatt-hour) for *envelope, HVAC* and *lighting* projects. Further details of measure-based findings are provided below.

Overall, the tracking system review found the following:

- Except for the *custom, CEI, overhead door weather stripping,* and *tune-up* measures in Large C&I Solutions, all measures utilize TRM 9.2, Volume 2 deemed algorithms. The savings equations were confirmed consistent with TRM 9.2. As described above, the *overhead door weather stripping* and *tune-up* measures follow *custom* approaches developed from assumptions and methodologies in the TRM. The EM&V team confirmed the *overhead door weather stripping* measures followed the M&V plan through this tracking system review. A tracking system review of the *tune-up* measures was completed to inform *tune-up* evaluated savings separately from the mid-year tracking system review.
- Large C&I Solutions measures utilized TRM 9.2, Volume 2 deemed savings assumptions, with two notable exceptions. The *overhead door weather stripping* measure used extrapolated savings values based on the *commercial door air infiltration* measure in TRM 9.2. Also, some *lighting efficiency* measures used site-specific AOH instead of the deemed values in TRM 9.2 for *lighting* projects.
    - Seven percent of *lighting* projects used site-specific *custom* AOH as captured from the site and based on the buildings' typical operating hours and hours of occupancy.

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- The EM&V team noted 18 *HVAC* measures with a baseline efficiency that did not match the current federal standard. The TRM does not include the efficiencies explicitly in the savings tables. From following the references and methodology, the EM&V team used the applicable federal standard efficiencies[87], and confirmed the approach with the IEM.
- The overall tracking review realization rates were 102.5 percent for kilowatts and 99.6 percent for kilowatt-hours. Tracking review realization rates were precisely 100 percent for *compressed air*, *domestic hot water*, *HVAC, motors*, *other*, and *refrigeration* measures.

Table 147. Large Commercial and Industrial Solutions—PY2024 Q1–Q2 Tracking System Energy Savings and Realization Rates by Measure Category

	Claimed savings		Evaluated savings		Realization rate	
Measure category	kW	kWh	kW	kWh	kW	kWh
Compressed air	82.6	490,007	82.6	490,007	100.0%	100.0%
Domestic hot water	18.0	56,140	18.0	56,138	100.0%	100.0%
Envelope	76.9	1,869,448	76.8	1,869,451	99.9%	100.0%
HVAC	4.0	252,612	58.5	178,292	1455.2%	70.6%
Lighting	522.1	3,293,039	522.6	3,294,115	100.1%	100.0%
Lighting—new construction	1,006.9	8,436,202	1,000.7	8,412,795	99.4%	99.7%
Motors	9.9	84,431	9.9	84,431	100.0%	100.0%
Other	100.2	884,358	100.2	884,358	100.0%	100.0%
Refrigeration	103.7	909,812	103.7	909,812	100.0%	100.0%
Total evaluated	**1,924.2**	**16,276,048**	**1,972.9**	**16,179,400**	**102.5%**	**99.4%**

9.4.2.2 Compressed Air

- No issues were found.

9.4.2.3 Domestic hot water

- The EM&V team found four measures with minor rounding differences in energy and demand savings.

9.4.2.4 Envelope

- For project number EA-0003191834, one line item reported demand (kilowatt) savings that differed from the evaluated savings calculations. The reason for the savings deviation could not be determined based on the information provided in the tracking system. The EM&V team recalculated the demand savings using the tracked parameters and TRM algorithms and determined a kilowatt realization rate of 96.4 percent for the affected line item.

[87] https://www.law.cornell.edu/cfr/text/10/431.97#fn1_tbl3

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9.4.2.5 HVAC

- For 18 line items across 9 project numbers, the reported demand (kilowatt) savings differed from the evaluated savings calculations. All of these measures reported a baseline EER (*BaseLineEfficiency*) in the tracking system that was different from the current federal standard.[88] The EM&V team recalculated the demand savings using the federal standard and calculated a kilowatt realization rate of -463 percent for the affected line items (overall savings for these measures went from negative to positive). The list below includes a sample of the affected project numbers, with the full list available upon request:
    - EA-0003192037,
    - EA-0001355236,
    - EA-0001333493,
    - EA-0000958565, and
    - EA-0001051480.
- For project number EA-0003192037, one line item reported energy (kilowatt-hour) savings that differed from the evaluated savings calculations. The reason for the savings deviation could not be determined based on the information provided in the tracking system. The EM&V team recalculated the energy savings using the tracked parameters and TRM algorithms and determined a kilowatt-hour realization rate of 78.1 percent for the affected line item.

9.4.2.6 Lighting

- For two projects (EA-0001519851 and EA-0001524054), the therms penalty calculated for all line items appeared to use a savings factor that is not from the TRM. The EM&V team used the factor from the TRM for natural gas heating (-0.008 therms/kWh savings), which resulted in a realization rate of 714 percent for the therms penalty.

9.4.2.7 Lighting—New Construction

- For four projects, the EM&V team was unable to match the reported energy and demand savings for the project savings line items. The EM&V team believes the discrepancies may be arising from accounting for *not qualified* or *exempt* fixtures. The evaluated savings for these line items resulted in 100.6 percent realization rates for kilowatt-hour and kilowatt savings. The affected project numbers were:
    - EA-0001685111,
    - EA-0003198242,
    - EA-0002916297, and
    - EA-0002916636.

[88] https://www.law.cornell.edu/cfr/text/10/431.97#fn1_tbl3

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9.4.2.8 Motors

- No issues were found.

9.4.2.9 Other

- No issues were found.

9.4.2.10 Refrigeration

- No issues were found.

9.4.3 Tune-Up and Commercial Wi-Fi Thermostat Measurement and Verification Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review began using the TRM 9.2, the CoolSaver Program M&V Plan,[89] and the Memorandum of Understanding to reference our review of measure-level savings assumptions. The EM&V team reviewed the tracking systems linkage to the TRM deemed savings and supplemental documentation methods used to estimate savings. After the measure-level review, the EM&V team verified energy savings calculations for engineering fundamentals, appropriateness, and accuracy.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified that the savings estimates in the tracking system are consistent with the savings outlined in TRM 9.2, used to estimate project savings. Third, it assessed the ability of the tracking system to support future evaluation needs.

The ArchEE database includes the key data for all projects and reported savings for *AC* and *heat pump tune-up* and *commercial Wi-Fi thermostat* measures, which totaled 355 measures.

As part of the PY2024 evaluation, CLEAResult provided a tracking system extract, including pre- and post-test-out projects used as the basis for CLEAResult's PY2021–BY2023 efficiency loss (EL) calculations. The EM&V team reviewed this dataset, examined it for outliers, and used it to calculate two efficiency loss values for the commercial sector: one for projects with a refrigerant charge adjustment and one for projects without a refrigerant charge adjustment.

Most of the key *tune-up* measure data is maintained in a separate database outside of ArchEE. The supplemental database was required for verifying the EL values, as ArchEE did not capture all four refrigerant charge values from iManifold.[90] As recommended last year, with continuous development and changes, the EM&V team recommends developing and maintaining a data dictionary to describe the data and document changes within this database.

Finally, as with previous years, it appears that the *commercial Wi-Fi thermostat* measures still require manual input of deemed energy (kilowatt-hour/ton) and demand savings (kilowatt/ton) values. This led to many instances of rounding errors, leading to savings deviations (described in further detail below). Automating this process in the future will allow for more effective QA/QC and reduce the likelihood of rounding errors.

[89] The *tune-up* measure methodology was developed separately under EAL's own CoolSaver program prior to being included in the Large Commercial and Industrial Solutions program.
[90] https://imanifold.com/

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9.4.3.1 Tune-Up and Commercial Wi-Fi Thermostat Measurement and Verification Findings

The EM&V team evaluated CLEAResult's savings calculations by reviewing the M&V sample of participants to confirm the savings methodology and results obtained, repeating the steps, and making calculation adjustments.

The ArchEE tracking system supplied all participant and unit-level data; claimed savings was the primary tool for checking reported savings and performing evaluation savings calculations.

Detailed findings from the M&V review for *tune-up* and *commercial Wi-Fi thermostat* measures are presented below.

- Thirteen *commercial Wi-Fi thermostat* measures installed on *air conditioning with electric resistance heat* systems were using incorrect energy savings. For energy savings, reported savings were calculated as if the thermostat was installed on a *heat pump* system by including energy savings associated with the *heat pump* heating algorithms. The EM&V team adjusted the energy savings to include only the *air conditioning cooling* algorithm; this adjustment decreased energy savings. Ten of the affected project numbers are listed below, with the complete list available upon request:
    - 2022-385021,
    - 2022-385017,
    - 2022-385015,
    - 2022-385019,
    - 2022-385018,
    - 2022-388120,
    - 2022-388295,
    - 2022-446418,
    - 2022-446260, and
    - 2022-446250.
- Two *commercial central air conditioner (tune-up)* projects (2022-419031 and 2022-419028) reported EER_{Post} values in ArchEE of 0.001. The projects also did not report values for $EFLH_c$ and EL. The EM&V team adjusted the calculation for these projects to use the parameters provided in the supplemental data, which did not impact savings.

9.4.4 Engineering Desk Reviews

The EM&V team evaluated CLEAResult's savings calculations by reviewing the program tracking data and project documentation to confirm the savings methodology used and results, repeating the calculation steps, and making adjustments.

The engineering desk reviews included reviewing the available project documentation in determining the source of key parameters for the deemed savings protocols from TRM 9.2. After selecting the best source of the key parameters from the available documentation, the savings were calculated based on TRM 9.2 algorithms and compared to the claimed savings.

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In addition to the tracking system review, the engineering desk reviews also showed a consistent use of TRM 9.2 algorithms across all the measures claimed in Large C&I Solutions. The EM&V team made minor adjustments to specific projects described in Section 9.4.2.

The EM&V team completed 70 engineering desk reviews of Large C&I Solutions accounts. These projects represented all measure categories in the program, except for *tune-up* measures, and had gross savings of 49,969 MWh, or 47 percent of the total Large C&I Solutions recorded gross savings of 106,131 MWh. This percentage of total program savings is based on finalized ArchEE data from February 24, 2025.

9.4.5 Site Visits

The EM&V team's evaluation plan included conducting 30 site visits to Large C&I Solutions customers; these site visits also received an engineering review, as discussed above. The EM&V team's field inspector recorded the verified quantities, operation, building type, and space condition of each of the measures observed while on-site and collected additional information on critical parameters. For Large C&I Solutions, some of the key data and spot measurements obtained for essential parameters, as applicable, included:

- *compressed air* measures: make/model of installed units, quantity, modulation control, and system pressure;
- *domestic hot water* measures: type of service, number of installed units, and rated output of installed units;
- *envelope* measures: length of the installed door, gap width, and heating/cooling system type;
- *HVAC* measures: quantity, building type, and make/model of installed units;
- *lighting* measures: base/new wattage, number of lamps per fixture, lamp/fixture make/model/type, base/new control type, building type, space heating/cooling type, and AOH;
- *motors* measures: quantity, make/model of installed motors, motor wattage/efficiency, and motor location;
- *other* measures: single- or three-phase service, wattage draw, and equipment type; and
- *refrigeration* measures:, refrigeration door gasket length and width, walk-in type (freezer or cooler), and evaporator fan motor size.

The site visits found that most parameters recorded in the project documentation to calculate savings were accurate. Out of the 30 site visits conducted, ten projects had savings adjustments resulting from the site visit. The savings adjustments from the site visits are described in further detail in the following section.

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9.4.6 Desk Review and Site-Visit Results

As noted earlier, the PY2024 Large C&I Solutions impact evaluation efforts included an engineering analysis for a sample of 70 projects and a site visit for 30 of those projects reviewed. For 50 of the projects in the sample, no savings adjustments were made. For the remaining 20 projects, the impact evaluation found various discrepancies in the project documentation, the site-specific data, or methodologies that required adjustments of parameters from the claimed savings estimates. The table below provides project-level realization rates, by measure category, for the 70 Large C&I Solutions projects reviewed during the evaluation. Detailed descriptions of the 20 projects with energy or demand savings adjustments follow Table 148 by measure category.

Table 148. Large Commercial and Industrial Solutions—PY2024 Desk Review and Site Visit Results, By Project

EM&V participant ID	EM&V review type[91]	Ex-ante savings		Ex-post savings		Realization rate	
		kW	kWh	kW	kWh	kW	kWh
Custom—CEI							
221001	Desk review	589.4	3,483,889	589.4	3,483,889	100.0%	100.0%
221003	Desk review	121.4	855,769	121.4	855,769	100.0%	100.0%
221006	Desk review	0.0	1,816,884	0.0	1,816,884	N/A	100.0%
221007	Desk review	0.0	2,032,310	0.0	2,032,310	N/A	100.0%
221008	Desk review	319.3	1,503,141	319.3	1,503,141	100.0%	100.0%
221009	Desk review	0.0	950,075	0.0	950,075	N/A	100.0%
221012	Desk review	0.0	441,107	0.0	441,107	N/A	100.0%
221015	Desk review	44.1	482,069	44.1	482,069	100.0%	100.0%
221022	Desk review	0.0	59,972	0.0	59,972	N/A	100.0%
221029	Desk review	0.0	3,462,799	0.0	3,462,799	N/A	100.0%
221033	Desk review	162.6	1,381,868	162.6	1,381,868	100.0%	100.0%
321001	Desk review	0.0	5,401,371	0.0	5,401,371	N/A	100.0%
321007	Desk review	0.6	21,325	0.8	21,889	120.4%	102.6%
421001	Desk review	1,327.9	3,078,694	1,314.9	3,078,694	99.0%	100.0%
421002	Desk review	188.8	984,650	188.8	984,650	100.0%	100.0%
421006	Desk review	122.1	628,759	122.1	628,759	100.0%	100.0%
Custom—CEI total		**4,355.9**	**34,184,670**	**4,167.4**	**34,202,931**	**95.7%**	**100.1%**
Custom—other							
221002	Site visit	6.0	45,293	6.0	45,293	100.0%	100.0%
221004	Desk review	7.9	67,369	7.9	67,369	100.0%	100.0%
221013	Site visit	30.6	131,030	27.8	118,928	90.8%	90.8%

[91] All projects that received an on-site visit also received an engineering desk review.

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EM&V participant ID	EM&V review type[91]	Ex-ante savings		Ex-post savings		Realization rate	
		kW	kWh	kW	kWh	kW	kWh
221014	Site visit	2.8	38,166	2.8	38,166	100.0%	100.0%
221018	Desk review	34.2	215,096	37.0	210,050	108.1%	97.7%
221019	Site visit	7.8	33,317	7.8	33,317	100.0%	100.0%
221021	Site visit	33.6	256,069	30.7	233,902	91.3%	91.3%
221026	Site visit	9.3	71,055	9.3	71,055	100.0%	100.0%
221030	Site visit	2.2	18,380	2.2	18,380	100.0%	100.0%
321002	Site visit	32.1	236,170	32.1	236,170	100.0%	100.0%
321003	Site visit	3.3	44,707	3.3	44,707	100.0%	100.0%
421003	Site visit	29.0	251,963	29.0	251,963	100.0%	100.0%
421004	Site visit	55.6	140,551	55.6	140,551	100.0%	100.0%
421016	Desk review	7.6	55,076	7.6	55,076	100.0%	100.0%
421025	Site visit	8.8	234,313	8.8	234,313	100.0%	100.0%
421027	Desk review	0.1	10,851	0.1	10,851	100.0%	100.0%
Custom—other total		**270.8**	**1,849,406**	**267.9**	**1,810,091**	**98.9%**	**97.9%**
Custom—early review							
221016	Desk review	518.4	4,541,297	518.4	4,541,297	100.0%	100.0%
421008	Site visit	57.0	477,527	57.0	477,527	100.0%	100.0%
421019	Desk review	53.4	703,899	57.2	703,899	107.2%	100.0%
421020	Desk review	20.0	458,584	20.0	460,525	100.0%	100.4%
421026	Site visit	313.1	2,112,453	313.1	2,112,453	100.0%	100.0%
Custom—early review total		**961.9**	**8,293,761**	**965.8**	**8,295,702**	**100.4%**	**100.0%**
Lighting—deemed							
221010	Site visit	27.3	150,162	27.3	150,162	100.0%	100.0%
221017	Site visit	1.8	8,187	1.8	8,033	98.1%	98.1%
221020	Desk review	2.0	10,904	2.0	10,883	99.8%	99.8%
221023	Desk review	1.8	9,965	1.8	9,965	100.0%	100.0%
221025	Site visit	14.9	94,777	15.7	99,931	105.5%	105.4%
221028	Site visit	3.5	18,853	3.4	18,277	96.9%	96.9%
221032	Desk review	1.5	15,935	1.5	15,935	100.0%	100.0%
221035	Site visit	17.4	88,691	17.4	88,691	100.0%	100.0%
321004	Site visit	12.1	47,778	12.1	47,778	100.0%	100.0%
321005	Desk review	10.1	40,627	10.1	40,627	100.0%	100.0%
321008	Desk review	27.6	209,787	27.6	209,787	100.0%	100.0%

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EM&V participant ID	EM&V review type[91]	Ex-ante savings		Ex-post savings		Realization rate	
		kW	kWh	kW	kWh	kW	kWh
421005	Desk review	7.7	34,786	7.7	34,786	100.0%	100.0%
421018	Desk review	13.9	73,314	13.9	73,314	100.0%	100.0%
421021	Desk review	10.6	68,084	10.6	68,084	100.0%	100.0%
421023	Desk review	1.2	6,840	1.2	5,690	103.7%	83.2%
Lighting—deemed total		**153.2**	**878,690**	**153.9**	**881,943**	**100.5%**	**100.4%**
Lighting—non-deemed							
221005	Site visit	2.5	13,075	2.5	13,075	100.0%	100.0%
221011	Site visit	45.9	198,500	45.9	198,500	100.0%	100.0%
221013	Site visit	1.6	13,028	1.6	13,028	100.0%	100.0%
421008	Site visit	175.4	1,387,794	174.8	1,387,794	99.7%	100.0%
421012	Site visit	36.4	289,918	35.8	284,609	98.2%	98.2%
421017	Site visit	244.6	2,598,632	244.6	2,598,632	100.0%	100.0%
Lighting—non-deemed total		**506.4**	**4,500,947**	**505.2**	**4,495,638**	**99.8%**	**99.9%**
Other							
221005	Site visit	0.7	6,516	1.7	6,306	249.7%	96.8%
221018	Desk review	-0.5	97,542	28.1	97,542	-5299.6%	100.0%
221024	Site visit	0.3	2,880	0.3	2,880	100.0%	100.0%
221025	Site visit	0.9	3,881	2.7	2,382	294.6%	61.4%
221027	Site visit	1.1	16,826	1.1	16,826	100.0%	100.0%
221031	Desk review	7.6	66,420	7.8	68,053	102.5%	102.5%
221034	Site visit	0.2	2,060	0.2	2,060	100.0%	100.0%
221035	Site visit	0.3	256	0.3	256	100.0%	100.0%
321006	Site visit	1.8	56,047	1.8	56,047	100.0%	100.0%
321008	Desk review	0.1	178	0.1	165	100.0%	92.5%
421013	Site visit	2.1	14,841	1.7	9,308	79.3%	62.7%
421014	Desk review	0.3	2,691	0.3	2,691	100.0%	100.0%
421017	Site visit	-0.5	6,825	-0.5	6,825	100.0%	100.0%
421022	Site visit	1.3	11,124	1.3	11,124	100.0%	100.0%
Other total		**15.7**	**288,089**	**46.9**	**282,466**	**299.0%**	**98.0%**

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The project-based savings adjustments are provided below by measure strata and EM&V *ParticipantID.* Complete details for the desk reviews, site visits, and custom analyses can be found in the Technical Appendix companion to this report.

9.4.6.1 Continuous Energy Improvement

The *CEI* stratum consisted of 50 projects with a total gross energy savings of 49,882 MWh, representing 48 percent of the entire program. Twenty-two desk reviews were conducted on this stratum, resulting in three projects with savings adjustments.

CEI projects consist of meetings and working with energy ambassadors for Large C&I Solutions customers to implement facility-wide energy efficiency awareness. *CEI* projects were primarily analyzed using metered data, monthly billing data, or facility interval data, following Option C of the International Performance Measurement and Verification Protocol (IPMVP) for whole-facility analysis. The M&V plan for *CEI* projects is reviewed annually by the EM&V team, and all projects selected for desk reviews follow the M&V plan. The three projects with adjustments are described below.

- **Participant IDs 321007 adjustment for calculation error.** This project is for *CEI* at a manufacturing facility, which implemented HVAC temperature setback, cooldown/warmup adjustments on HVAC damper positions, and cogged v-belts for HVAC supply fans. The EM&V team found the formulas for the temperature setback measure used a fixed mixed air temperature of 68°F for all hours of the year, rather than the calculated mixed air temperatures. The M&V team adjusted the equation to use the mixed air temperature for each hour in calculating the heating and cooling load, which increased the demand and energy savings.
- **Participant ID 421001 adjustment for calculation error.** This project is for *CEI* at a manufacturing facility. For the kilowatt savings calculation, the billing period start and end dates for the 2024 measurement period were adjusted to match the *demand EOY 2024* data provided. This slightly reduced demand savings.
- **Participant ID 421024 adjustments for calculation error and calculation methodology.** This project is for *CEI* at a manufacturing facility, which implemented controls that reduced the idle time of the hydraulic pumps during periods of plant shutdown. There were two adjustments to project savings:
    - For the reported savings, the efficiency for the 1,800-ton machine motor was used for both the pre-installation and post-installation energy use. The calculation methodology was adjusted to include the motor efficiencies for both motor sizes. This adjustment increased energy and demand savings.
    - The kilowatt savings were assessed by assuming a ten percent CF for the peak period since most of the downtime will occur during the weekend shift. This drastically reduced the peak demand savings.

Overall, these adjustments resulted in increased energy savings and decreased demand savings.

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9.4.6.2 Custom—Early Review

The *custom—early review* stratum consisted of nine projects with a total gross energy savings of 11,118 MWh, representing 11 percent of the program. Five desk reviews and two site visits were conducted on this stratum, resulting in two projects with savings adjustments.

The measures in this stratum consisted of one *CEI*, one *custom—heating and cooling,* and seven *custom—non-heating and cooling* projects. Popular measures for *early reviews* consisted of *compressed air energy improvements*, *injection molding machines* replacements, and *water/wastewater* efficiency improvements. The two projects with adjustments are described below.

- **Participant ID 421019 adjustment for calculation error.** The site is a manufacturing facility that installed a hydroelectric injection molding machine (IMM). The equations were adjusted for the pre-installation kilowatt value to include the five days of holidays in the hours of operation; this increased the demand savings.
- **Participant ID 421020 adjustment for calculation error.** This facility implemented refrigeration updates, including sequencing software to optimize compressor operation. The EM&V team found the energy savings for this project were 143,676.62 kWh in this project's calculation and 141,735.04 kWh in the tracking system. The evaluated savings were adjusted to 141,735.04 kWh, which increased the energy savings for this project.

9.4.6.3 Custom—Other

The *custom—other* stratum consisted of 75 projects with a total gross energy savings of 13,559 MWh, representing 13 percent of the entire program. Sixteen desk reviews and twelve site visits were conducted on this stratum, resulting in three projects with savings adjustments. The savings adjustments were primarily methodology adjustments or error corrections from the metered data analysis conducted by CLEAResult.

Common measures in the *custom—other* stratum consisted of *compressed air* system enhancements, *injection molding machines, process chilled water* improvements, and *VFDs.* The three projects with adjustments are described below.

- **Participant ID 221013 adjustment for calculation error.** The site is a newly constructed manufacturing plant, that installed lighting and HVAC measures. In the chiller calculator, the integrated part-load value (IPLV) and nonstandard part-load value (NPLV) inputs were reversed on the e*quipment inputs* worksheet according to the chiller performance data. The AHRI-rated IPLV was adjusted from 15.896 to 15.634 EER, and the NPLV was adjusted from 15.634 to 15.896 EER. These changes decreased energy and demand savings.
- **Participant ID 221018 adjustments for calculation methodology.** This site is a retail store that installed 22 packaged HVAC units with advanced controllers and VFDs. For seven units (two LCM120U4E, one LCM180U4M, one LCM092U4E, one LCM036U4E, and one LCM074U4E), the VFD methodology was adjusted to the prescriptive ECM methodology from the TRM. Cooling COP was determined from AHRI certificates, and the proposed motor load was determined by assuming 80 percent load factors and default motor efficiencies from Table 361 of Arkansas TRM 9.2. Baseline motor load assumed permanent split capacitor to be conservative. These adjustments decreased the energy savings and increased the demand savings.

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- **Participant ID 221021 adjustments for blanket coverage and temperature.** This project consisted of installing thermal blankets on IMM barrels at a manufacturing facility. There were two adjustments resulting from the on-site inspection. The average setpoint temperature for unit *Husky 1* was adjusted from 550°F to 545°F from the inspection. The length of insulation *Husky 2* was adjusted from 8.8 to 6.8 feet for a two-foot section that had fallen off before the on-site inspection, and facility personnel stated they would not replace it. These adjustments decreased demand and energy savings.

9.4.6.4 Other

The *other* stratum consists of prescriptive *non-lighting* measures, including *HVAC replace-on-burnout*, *air- and water-cooled chillers*, *commercial showerheads*, *faucet aerators*, *commercial door air infiltration, premium efficiency motors,* and *refrigeration* projects. The *other* strata consisted of 141 projects with 6,899 MWh of energy savings, representing seven percent of the program savings. Fourteen desk reviews and ten site visits were conducted on this stratum, with six adjustments to savings. The six projects with adjustments are described below.

- **Participant ID 221005 adjustment for baseline and motor efficiencies.** The site is a newly added pelletizer area at an industrial facility that installed lighting, premium efficiency motors, and HVAC measures. There were multiple adjustments to savings:
    - For the HVAC measure, the baseline full load efficiency for cooling mode was adjusted from 12.6 EER in the tracking data to 11 EER as per Arkansas TRM 9.2.
    - The post-installation motor efficiencies were adjusted for all six motors incented under the project. For the one 30 hp motor the efficiency was adjusted from 94 percent to 93.6 percent, the one 3 hp and two 5 hp motors from adjusted from 90 percent to 89.5 percent, and the two 10 hp motors were adjusted from 92 percent to 91.7 percent, as per the provided motor nameplates.

  Overall, these adjustments reduced energy savings and increased demand savings.
- **Participant ID 221018 adjustment for baseline efficiencies.** The site is a retail store that installed 22 packaged HVAC units with advanced controllers and variable frequency drives (VFDs). There were multiple adjustments to baseline efficiencies:
    - For nine units (LCM180U4M), the baseline full load efficiency for cooling mode was adjusted from 12.1 EER in the tracking system to 10.8 EER as per Arkansas TRM 9.2.
    - For seven units (LCM156U4M), the baseline full load efficiency for cooling mode was adjusted from 12.1 EER in the tracking system to 10.8 EER as per Arkansas TRM 9.2.
    - For two units (LCM120U4E), the baseline full load efficiency for cooling mode was adjusted from 12.6 EER in the tracking system to 11 EER as per Arkansas TRM 9.2.
    - For one unit (LCM092U4E), the baseline full load efficiency for cooling mode was adjusted from 12.6 EER in the tracking system to 11 EER as per Arkansas TRM 9.2.
    - For one unit (LCM074U4E), the baseline full load efficiency for cooling mode was adjusted from 12.6 EER in the tracking system to 11 EER as per Arkansas TRM 9.2.

  Overall, these adjustments increased the demand savings, resulting in positive evaluated savings rather than the negative reported savings.

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- **Participant ID 221025 adjustments for cooling capacity and baseline efficiency.** The site is a newly constructed manufacturing building that installed lighting and HVAC measures. Multiple adjustments were made for the project from the desk review and site visit:
    - The baseline full lead efficiency for cooling mode was adjusted from 12.6 EER in the tracking system to 11.0 EER per Arkansas TRM 9.2 for units *RN011* and *RN007*. This increased the demand savings.
    - From the on-site inspection, the model number was adjusted for one of the units from *RQ004* to RN008, and which changed the installed cooling capacity from 51,500 to 96,000 Btuh.

  Overall, these adjustments increased demand and energy savings.
- **Participant ID 221031 adjustments for quantity and equipment type.** The site is a grocery store which installed *door gaskets*, and *strip curtains* on freezers and coolers. The refrigeration type was adjusted the for the *produce & deli* freezers from coolers to freezers as per the invoice and on-site survey. The linear feet of *door gaskets* was adjusted from 18 to 16.5 for the *produce & deli* according to the invoice. Overall, these adjustments increased energy and demand savings.
- **Participant ID 321008 adjustment for unknown calculation difference.** This project is for two newly built warehouses that had interior and exterior LED lighting, and a PTHP installed. The HVAC energy savings did not match the PTHP algorithms. The evaluated energy savings using the TRM algorithms are lower than claimed savings, resulting in a 92.5 percent realization rate.
- **Participant ID 421013 adjustment for calculation error.** A convenience store and restaurant directly installed refrigeration strip curtains on walk-in coolers and freezers, faucet aerators on bathroom sinks, and a pre-rinse spray valve on a kitchen sink. The quantities were adjusted from the tracking system for the faucet aerators and the pre-rinse spray valves based on the on-site inspection. The on-site inspection found three faucet aerators and one pre-rinse spray valve, which matched the participation agreement, while the tracking system had the quantities reversed. Adjusting the quantities resulted reduced energy and demand savings.

9.4.6.5 Lighting—Deemed

The *lighting—deemed* stratum consists of *lighting* projects that strictly adhere to the deemed lighting AOH and CF outlined in the TRM. This stratum consisted of 162 projects with 10,963 MWh of claimed savings, representing ten percent of the program. Fifteen desk reviews and six site visits were conducted on this stratum, with five adjustments to the claimed savings.

- **Participant ID 221017 savings adjustments for on-site inspection conditions.** This project consists of a supermarket that replaced existing LED lamps with new LED lamps. Two quantity adjustments were made from the on-site inspection. The fixture quantities for the r*etail main sales floor* were adjusted from 240 to 236. The reported savings removed the fixture savings for the men's *RR* since there is only one restroom (a combined restroom with a single fixture). The adjustments were also carried over to the baseline quantities, which reduced energy and demand savings.
- **Participant ID 221020 savings adjustment for input wattage.** The site is a bank, that replaced its existing fluorescent lighting with LED lighting. The post-retrofit fixtures wattage was adjusted for *L24T8/840/9G-AB* from 9 W to 12 W, per the submitted DLC certificate. This adjustment decreased energy and demand savings.

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- **Participant ID 221025 savings adjustment for on-site inspection conditions.** The site is a newly constructed manufacturing building that installed lighting and HVAC measures. The quantity of installed fixtures for the *gummy production* area was adjusted from fourteen to ten and the *conference/break* area from two to three, per the on-site inspection results. This adjustment increased demand and energy savings.
- **Participant ID 221028 savings adjustments for on-site inspection conditions.** The site is a bank building that replaced its existing fluorescent lighting with LED lighting and removed some fixtures from the building. Several adjustments were made from the on-site inspection.
    - The *Beam-Lite Industries_S-CCT-3050-WHT-UNV (set to 30W)* was not installed in the *basement stairs front* area and four *L48T8/850/10G-ID DE* lamps were installed in the existing fixture.
    - Also, the CFL fixture in the *basement mechanical* was not removed as per the project documentation.

  Overall, these adjustments resulted in decreased energy and demand savings.
- **Participant ID 421023 savings adjustment for building type.** The site is a wedding venue that replaced its existing fluorescent lighting with LED lighting. Based on the provided post-installation and Google Maps photos, the building type was adjusted from *office* to *public assembly*. This decreased energy savings and increased demand savings.

9.4.6.6 Lighting—Non-Deemed

The *lighting—non-deemed* strata consisted of lighting projects with an AOH or CF tracked in the tracking system different from the deemed TRM value. These TRM value differences sometimes consist of 8,760-hour safety lighting for individual projects or custom estimated AOH for each facility area. A total of eleven projects were in this strata, with 12,261 MWh of claimed savings, representing twelve percent of the program savings.

Six desk reviews and site visits were conducted on this stratum. The desk reviews focused on the installed lighting details, while the EM&V team attempted to schedule site visits to verify the custom AOH values. The site visits conducted for custom AOH values consisted of reviewing each area's use within the facility with the site personnel, observing the spaces' use, and collecting information on the controls. The EM&V team made engineering judgments about whether the custom AOH was valid and if the resulting AOH or CF should be adjusted for what was observed during the site visit.

The desk reviews and site visits resulted in three projects with adjustments to the claimed savings.

- **Participant ID 221011 adjustment for calculation error.** The site is a religious building that installed lighting measures which included fluorescent, incandescent, and metal halide lighting replaced with LED lighting throughout the interior and exterior of the facility. From the tracking data, the therms penalties for the interior lighting measures were not tracked. The evaluated savings included therms penalties for all interior lighting measures where gas was indicated for the heating type.
- **Participant ID 421008 adjustment for calculation error.** The site is a warehouse that replaced its existing fluorescent, incandescent, and HID lighting with LED lighting. The facility also installed an advanced lighting control system. For 11 measures that had occupancy sensors specified both in the baseline and proposed cases, the reported savings did not include the $(1 - CF_{controls})$ factor from Arkansas TRM 9.2 v2 formula 334. Including this factor caused decreased demand savings.

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- **Participant ID 421012 adjustment for fixture input wattage and baseline fixture type.** The site is a retail store that replaced interior fluorescent lighting and incandescent exit sign lighting with LED lighting. There were two adjustments for this project from the desk review and site visit:
    - From post-installation photos, 28 LED panel fixtures were found to have a model number of *55755* rather than the reported *55670*. The DLC wattage for this model number was 42.7 W (at the 40 W setting). The wattage was adjusted from 25 W to 32 W, based on a ratio adjustment for the 30 W setting from post-inspection photos. Based on pre-installation photos, the baseline fixture was adjusted from F24ILL to F23ILL. These adjustments decreased energy and demand savings.
    - The quantity of retrofit and baseline fixtures in the cashier attic area was adjusted from 4 and 2, to 2 and 1 to match post inspection. This adjustment decreased energy and demand savings.

  Overall, these adjustments resulted in decreased energy and demand savings.

9.4.7 Program Website and Documentation Review

To understand Large C&I Solutions, the EM&V team interviewed program staff and reviewed all information available on EAL's website related to the program and supplemental documentation provided by EAL and CLEAResult. The EM&V team received the following documentation related to the program:

- an ArchEE data tracking system extract containing PY2024 participant information and savings;
- the Quality Control and Assurance Manual for EAL commercial programs, dated February 1, 2023;
- the PY2024 Program Manual for Large C&I Solutions obtained from the EAL website; and
- updated white papers or M&V plans for *process chiller*, *refrigerator recycling*, *energy recovery ventilators*, *injection molding machines*, and *CEI savings*.

9.4.7.1 Program Website Review

Information found on the Large C&I Solutions website includes a general description of the program, such as eligibility and how participation works. It also provides a list of eligible measures and their incentive discounts. An example project at an industrial facility is displayed along with the estimated energy savings, incentive amount, and utility cost savings. A copy of the program and CoolSaver trade ally manuals are located on the website, and a search link is provided to find a participating trade ally by zip code lookup.

9.4.7.2 Program Documentation Review

The EM&V team received program-related documentation key to understanding the program and participation processes, including the PY2024 Program Manual and Quality Control and Assurance Manual. Key documents to understanding the program savings methodologies and measuring-level savings include the project-level files, ArchEE data, TRM 9.2, supplementary deemed savings and M&V methodologies, and ongoing reviews with EAL and CLEAResult staff. Supplementary deemed savings and M&V methodologies included *overhead door weather stripping*, *PTAC sealing*, *CEI*, *injection molding machines*, and *compressed air systems*.

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The project details and documentation collected by EAL, the implementer, and trade allies for many sampled projects are extensive. As bulleted in the section above, the critical baseline and new equipment assumptions, drivers of the prescriptive measure savings, are well described in trade ally proposals and equipment inventories. Additional documents collected at project approval support the equipment quantities and performance metrics. The documentation included invoices (support for claimed quantities and equipment make and models) and manufacturers' specification sheets (confirmation of equipment makes, models, sizes, types, and efficiencies). These are industry-standard best practices for documentation collection, which reduce the uncertainty of the project savings assumptions and development.

In most cases, the EM&V team found that documentation matched the data recorded in the ArchEE tracking system. Equipment type, quantities, and in most cases, building/space conditions were accurately recorded compared to the efficient technology data and project file documentation reviewed. Also, across projects, most project files contained similar documentation. Most project files had, at a minimum, the signed customer proposal and project agreement. This proposal typically included the list of *retrofit* measures, with pre- and post-conditions and equipment parameters identified. Some files included multiple copies (e.g., initial proposal, final proposal) depending on whether the scope had changed during project development. Many project files included pre- and post-inspection forms with field inspector notes indicating site results.

Many projects also included pre- and post-installation photographic documentation. Photos were included with some proposals and inspection reports, but not all. Except for *direct-install* projects, all project files included invoices. All invoices were found to have measure-level cost breakdowns, which helped support and confirm project details. Documentation of site stipulated AOH, usually a letter or email with schedules of use from the customer, was included in project file requests for sites that used stipulated AOH.

In PY2024, the EM&V team found the project documentation continued to improve over previous program evaluations, and as a result, additional data requests to the implementer remained low compared to prior evaluations.

The project proposals include various details; however, the EM&V team would recommend adding other key parameters captured at the site used for savings calculations—these include *building type* and *heating and cooling space types*.

PY2024 saw continual documentation consistency for the make and model of all *lighting* products. DLC and ENERGY STAR certification sheets were included for all *lighting* projects. Manufacturer's specification sheets, however, were not included for most *lighting* projects. Manufacturers' specification sheets are essential for *LED exit signs,* because DLC or ENERGY STAR certification sheets are not available for these types of lights, and for non-qualified fixtures in *lighting-new construction* projects. As *lighting* measures contribute a significant portion of the program savings, documents that support key variables that are a driver of *lighting* measure savings include the post-installation lighting wattage. Having manufacturer's specification sheets would increase clarity between similar lighting types that may differ by color temperature, voltage, and other features that can impact the equipment's qualification and fixture input wattage.

Work orders or post inspection forms were provided for most *lighting* projects sampled, which allowed for easy verification of post quantities and model numbers. Verification of baseline quantities and lighting model numbers were limited in cases where work orders and pre-inspection forms were not provided.

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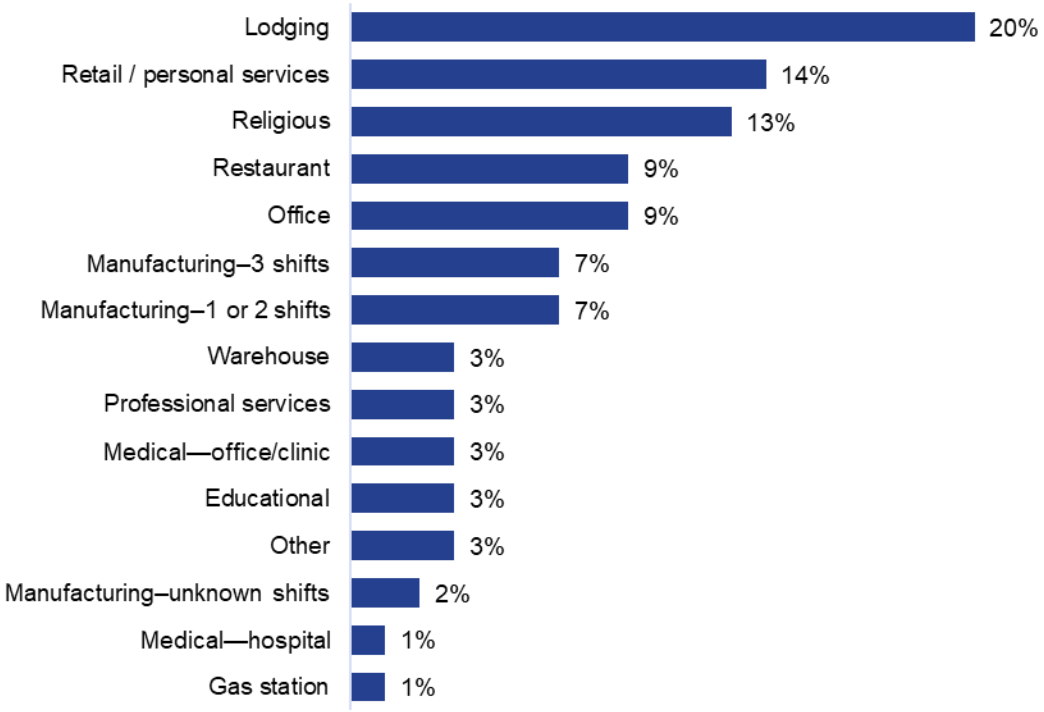
9.5 DETAILED PROCESS EVALUATION RESULTS

As part of the PY2024 evaluation for the program, the EM&V team conducted 123 telephone surveys (179 different measures) with recent program participants and 12 interviews with participating contractors. The participant survey included a series of structured questions to assess free-ridership and participant spillover for the NTG evaluation in addition to process information. Feedback from the contractor interviews also supported the NTG evaluation.

9.5.1 Respondent Firmographics

Surveyed participants were from a variety of different business types, with the most common types being lodging (20 percent), followed by retail or personal services (14 percent), and religious (13 percent). Manufacturing was also a common business type mentioned by 16 survey respondents. Figure 26 shows the survey respondents' primary business activity. The majority of respondents (87 percent) own the facility where they made program upgrades. The average number of full-time and part-time employees was 67 (57 full-time and 10 part-time). Full-time employees range from 0 to 600, and part-time employees range from 0 to 300.

Figure 26. Large Commercial and Industrial Solutions—Survey Respondent's Primary Business Activity (n=88)



Source: Participant Survey Question E1

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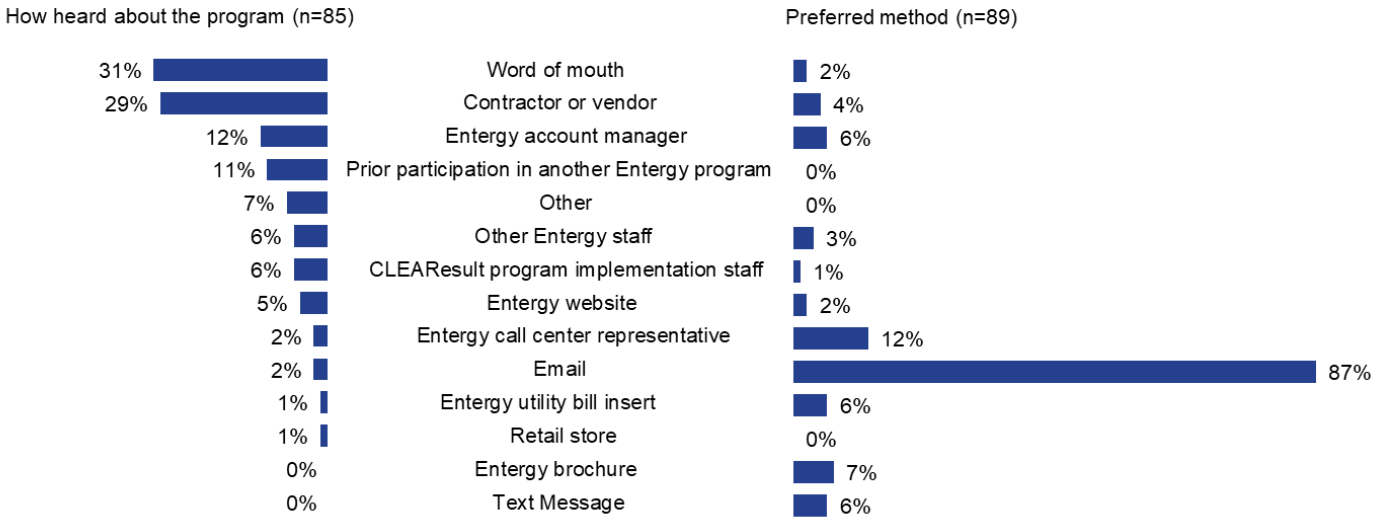
Seventy-one percent of respondents reported that their organization makes fiscal decisions at the local level. When considering energy efficiency projects, 25 percent of respondents said their organization has a formal payback period or return-on-investment requirements to approve energy efficiency projects. These requirements vary from a one to a seven-year payback, with the most common being between one to two years. No matter what level organizations make their decisions, cost savings was the most mentioned factor for making the energy-savings improvement through the program (42 percent). Other common reasons for utilizing the program included wanting better equipment (24 percent), wanting energy savings (21 percent), and the ability to get a rebate (14 percent).

The trade allies interviewed provided various services, including electrical, lighting, and HVAC, and two were service-based companies, where they assisted customers in energy efficiency projects and looked for incentives. All trade allies have been participating in the program for three or more years, with four indicating it has been more than ten years. They also work with commercial and industrial customers ranging from small businesses to large operations and involvement ranging from one project to more than 100. Most of the trade allies interviewed work in territories served by other utilities besides EAL, while three focus solely on EAL's territory.

9.5.2 Program Marketing

The most common way respondents reported learning about the Large C&I program was by word of mouth from friends or family (31 percent). The next most frequently mentioned sources were a contractor or vendor (29 percent), followed by an Entergy account manager (12 percent), and prior participation in an EAL program (11 percent). In response to how they would prefer to receive information about EAL's energy efficiency programs in the future, the most frequently mentioned preferred communication channel was through email (87 percent). The next most preferred methods were an Entergy call center staff (12 percent) and a brochure or paper mailing (7 percent). Figure 27 illustrates how participants learned about the Large C&I program and how they prefer to hear about EAL's programs.

Figure 27. Large Commercial and Industrial Solutions—How Participants Learned and Prefer to Hear about the Program



Source: Participant Survey Question A1, A2
*Multiple responses were allowed.
***Don't know* and *refused* responses excluded.

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Trade allies continue to provide mixed feedback when characterizing the level of program awareness among customers, although contractors are more likely to indicate that customers are aware of the program. Eight contractors indicated customers are aware or knowledgeable about the program, with some indicating they have a lot of repeat customers, leading to this response. One contractor specifically mentioned that Entergy Arkansas is better at getting the word out about the program than those Entergy programs in other states. For the two contractors who said customer awareness remains low, both indicated difficulty convincing customers that the programs are legitimate and have existed for years and that customers still believe the program is too good to be true.

Trade allies spoke highly of the program and feel it serves customers well. None of the contractors talked specifically about any marketing they do. One contractor said they do not promote the program, but they do “drive around to see if there are any businesses in their area that still need to update [their lighting].” Two contractors said they do not advertise the program but rely on word of mouth or talk with customers when they come into the store.

9.5.3 Participant Experience and Satisfaction

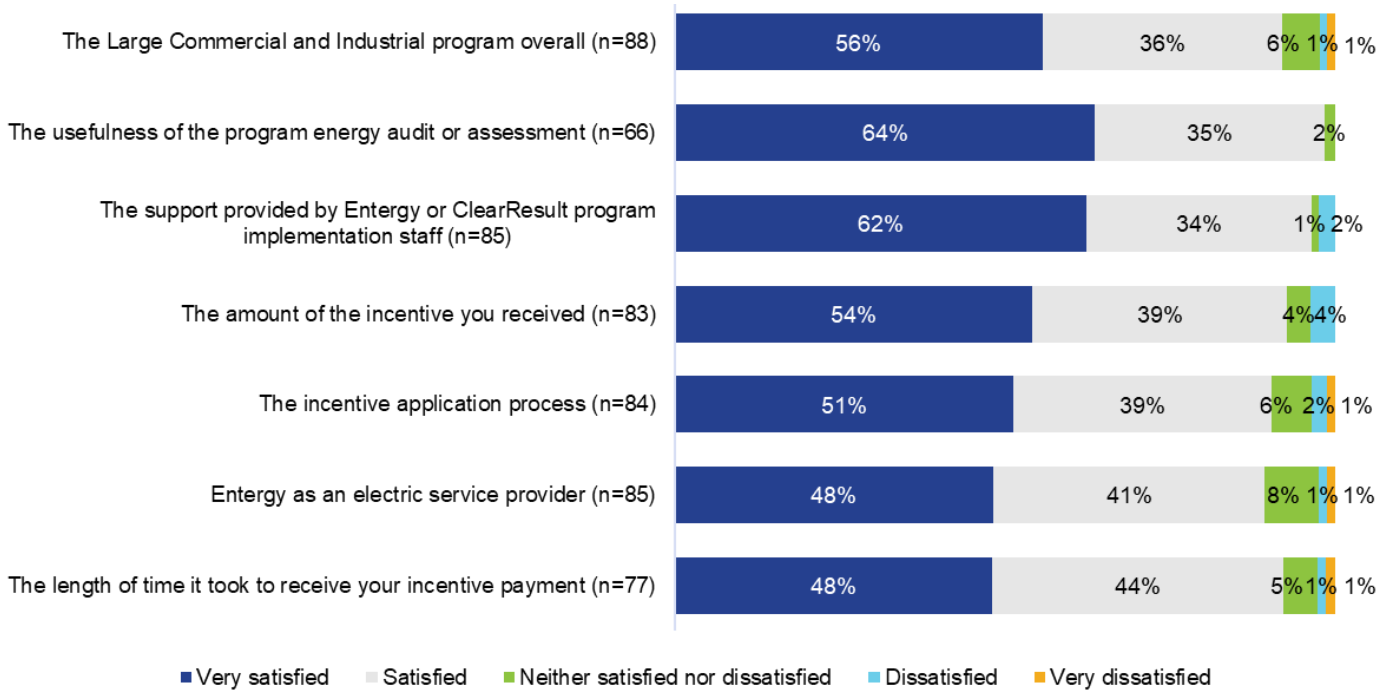
Overall, participants rated their satisfaction with the program highly. Over half of respondents (56 percent) said they were *very satisfied* with the Large C&I Solutions program overall, and an additional 36 percent reported being *satisfied* with the program. Two respondents reported being *dissatisfied* or *very dissatisfied* (one each). Both of these respondents indicated that they were dissatisfied because of the actions of the vendor or contractor. The respondent who said they were *very dissatisfied* explained that they were unhappy with the vendor they used because they were more focused on selling a product instead of helping them reduce their energy usage. The respondent who was *dissatisfied* said they were waiting for someone to get back to them on the findings from the inspection.

Respondents who reported being less than *very satisfied* were asked what EAL could do to improve their program experience. While most did not feel there was anything EAL could do (70 percent), wanting more savings was one of the most common improvements requested (three respondents). Another common improvement the respondents asked for was receiving more information from EAL about the program (two respondents). Three respondents specifically mentioned issues related to finding and working with a vendor or contractor. One respondent mentioned that the photo requirements should be less strict. Another respondent stated that there was a problem with the quality of the newly installed equipment, which led to it deteriorating quickly.

Figure 28 shows satisfaction ratings relating to specific aspects of participants’ experiences with the program. Ratings were high across all specific program aspects, with about half of respondents saying they were *very satisfied* with each element. The usefulness of the audit or assessment had the highest satisfaction, with 99 percent being *very satisfied* or *satisfied* followed by the support received from Entergy and implementation staff (96 percent). The incentive also had high satisfaction, with over 50 percent of respondents indicating they were *very satisfied* with the incentive application process and the amount of incentive received (51 percent and 54 percent, respectively). Participants' overall high satisfaction in the program continued in their satisfaction with EAL as an electric service provider. Over 80 percent of respondents said they were either *very satisfied* or *satisfied* with EAL overall as an electric service provider (48 percent and 41 percent, respectively).

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Figure 28. Large Commercial and Industrial Solutions—Participant Satisfaction with Program Aspects



Source: Participant Survey Question SAT1, SAT3, SAT5, SAT1e
**Don't know*, *not applicable*, and *refused* responses are excluded.

Overall, trade allies' experience with the program is positive. They indicate that the program is going well and that the incentives and rebates are good. Some trade allies appreciate that incentives can be higher than in other jurisdictions, there is a good variety of items available through the program, almost all types of customers can participate (e.g., large commercial, small business, non-profit organizations), and it is not difficult to get registered as a trade ally. The program helps businesses in Arkansas bring down their energy costs and save money on their monthly bills.

Like the participants, the trade allies interviewed expressed satisfaction with the program. Nine of 12 trade allies rated their satisfaction a 4 or 5 on a scale where one is *not at all satisfied* and five is *very satisfied*. One trade ally said they were *satisfied* with the program, and two trade allies rated their satisfaction as *not at all satisfied*. Of the two who were not at all satisfied, one indicated the program has too many rules, regulations, and paperwork. They would like the implementation staff available to help complete the paperwork instead of having to rely on their staff, who should be focused on sales. The second trade ally said there were too many program requirements associated with the CoolSaver measures and the refrigerant to continue to be involved in the program.

Some trade allies were also asked about their satisfaction with specific components of the program, including communications with implementation staff, the information and support received through the program, the incentive reimbursement process, and the time it takes to receive the incentives. Feedback was mainly positive, with most satisfaction ratings of 4 or 5 (on the same 1-5 scale where 1 is *not at all satisfied* and 5 is *very satisfied*). One trade ally rated the information and support as a three and stated they wish there was better information provided and feel that they need more support. No additional details were provided on what support was lacking other than possibly raising incentive levels to cover the cost increase. One trade ally had lower satisfaction with the incentive, rating both the incentive reimbursement process and the time it takes to receive the incentives lower (3 and 2, respectively).

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While satisfaction was primarily high, trade allies had recommendations for program improvements. The requirement for pictures was seen as both a positive and a negative. One trade ally (for CoolSaver measures) felt the pictures of the before and after were a "selling point" as they could show the client the difference. Another trade ally (lighting measures) felt pictures were burdensome, especially for those working with chain locations doing the same project. One trade ally mentioned the lighting calculator is updated frequently (once a month). If a project is started and a new calculator is released before the paperwork is submitted, his company needs to convert the project to the new calculator. This may not be a problem if doing one or two jobs, but if the number of jobs increases, so does the frustration of converting the project. Other specific comments included the following:

> *"Transition to other options from iManifold that is less expensive to use. The requirements can be overkill."*
>
> *"If Entergy could have faster response times and be more responsive, it would be helpful."*
>
> *"Change the portal to be more user-friendly. The portal is a bit outdated, clunky, and hard to use. We often need to directly email someone at Entergy to fix something in the portal or submit something manually. It's not a great platform to use."*
>
> *"Just be quicker to turn things in."*
>
> *"I would prefer to get all of the mistakes sent to me at once [instead of one-by-one when an application is submitted with mistakes]."*
>
> *"I would love it if the year-end process did not happen at the end of December. The winter is very tough on HVAC companies in AR. Our company's slow time is during the winter, and this is the same time that Entergy is creating its new budget and authorizing new things for the next year. At the end of the year, companies like his need the most money and the availability to do work and get paid for work. It would be a complete game changer if this could be moved to either spring or fall or even the middle of summer."*
>
> *"It would be easier to have someone from CLEAResult that I could call and have them do all of the paperwork."*

Fourteen percent (12 respondents) experienced challenges while completing their project through the program. The majority of the issues for respondents were related to finding and working with a vendor or contractor (five respondents). Most of these issues arose from confusion surrounding the quotes for a project and the lack of follow-up and communication from the vendor or contractor. Four respondents mentioned having difficulties with the paperwork, application, and strict photo requirements. One respondent had to retrofit the light poles in their parking lot because of the material they were made out of (ballast). Another respondent had issues convincing people to even use the program because they thought it was "too good to be true."

While some barriers and challenges were identified, the majority of participant respondents said they would recommend the program to others (96 percent). Of the three percent (three respondents) who said they would not recommend the program, two respondents explained that it was due to the lack of return on their investment. One respondent stated they would not recommend the program because it looks like a scam.

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9.6 NET-TO-GROSS RESULTS

9.6.1 Net-to-Gross Methodology

The program team assessed NTG via self-reports through the participant customer survey based on the guidance outlined in Protocol F of the Arkansas TRM Version 9.2. Also consistent with Protocol F, we triangulated the participant survey results with the trade ally interviews, which also reported a high level of program influence.

The sample frame for the survey consisted of customers who installed energy-saving upgrades for qualifying measures through the program between January 2023 and June 2024[92], stratified into three six-month participation periods. Participants were asked free-ridership questions and included in the free-ridership assessment for only the preceding 12 months (July 2023–June 2024) to limit the potential for recall issues. All participants surveyed dating back to January 2023 were asked spillover questions, allowing more time for potential spillover effects. In addition to the participation period, we further stratified the survey sample by type of project (i.e., CoolSaver and non-CoolSaver). The EM&V team randomly sampled projects within each stratum (limiting to one project per customer) sufficient to complete the targeted number of surveys in each stratum. For reporting, the CoolSaver category included the *compressed air*, *tune-ups*, and *Wi-Fi thermostat* measures.

In total, we surveyed 120 participants on free-ridership and 179 participants on spillover based on their date of participation. Table 149 summarizes the number of participants in the sample, the number who completed surveys by participation period, and the number of measures ultimately evaluated.

Table 149. Large Commercial and Industrial Solutions—Summary of Participant Survey Respondents by Participation Period

Participation period			Total completed surveys
Jan 2023–Jun 2023	July 2023–Dec 2023	Jan 2024–Jun 2024	
59	57	63	179

The survey included a series of structured questions about the participant's decision to pursue rebated energy-efficient upgrades to estimate free-ridership. As the Arkansas TRM does not allow for partial free riders, participants were either classified as full-free-riders (100 percent free-ridership) or non-free-riders (0 percent free-ridership) based on their responses to these decision-making questions. Table 150 below shows the survey questions that were used to classify free riders.

[92] Project dates were identified using the ArchEE database field *InstallationDate*.

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Table 150. Large Commercial and Industrial Solutions—Self-Report Free-Ridership Survey Questions

Survey question	Response options
FR3. [non-CoolSaver] Before learning about the Large Commercial and Industrial program, was your organization already planning to purchase and install the <MEASURE> project in <YEAR>? [CoolSaver] Before learning about the Large Commercial and Industrial program, was your organization already planning to perform the <MEASURE> in <YEAR>?	01 Yes 02 No 88 Don't know 99 Refused
FR4. If the program incentive had not been available, would your <YEAR> budget have accommodated the full cost of the <MEASURE>?	01 Yes 02 No 88 Don't know 99 Refused
FR5. [non-CoolSaver] If the incentive or other assistance from the program had not been available, would you still have purchased and installed the exact same <MEASURE> equipment, or would you have done something different? [CoolSaver] If the incentive or other assistance from the program had not been available, would you still have performed the exact same <MEASURE>, or would you have done something different?	01 Same *[SKIP TO FR7]* 02 Different 88 Don't know 99 Refused
FR6. [non-CoolSaver] *[ASK IF FR5 <> 1]* Would you have purchased and installed any <MEASURE_TYPE> project at all? [CoolSaver] Would you have performed a <MEASURE> at all?	01 Yes 02 No 88 Don't know 99 Refused
FR7. *[ASK IF FR6 = 1]* Would it have been the same level of efficiency, higher efficiency, or lower efficiency?	01 Same level of efficiency 02 Higher efficiency 03 Lower efficiency 88 Don't know 99 Refused
FR8. [non-CoolSaver] *[ASK IF FR5 = 1 OR FR6 = 1]* If the incentive or other assistance from the program had not been available, when would you have installed the <MEASURE> project? Would you have installed it… [CoolSaver] If the incentive or other assistance from the program had not been available, when would you have performed the <MEASURE>? Would you have installed it…	01 At the same time or sooner 02 Within one year 03 One to two years later 04 Three to five years later 05 More than five years later 88 Don't know 99 Refused

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We followed the same criteria for classifying free-riders used in prior evaluation research for consistency and comparability with prior evaluation results. To be classified as a full-free-rider, respondents must indicate the following conditions; respondents were classified as a non-free-rider if they did not meet all three of these conditions:

- Respondent was already planning to purchase and install (or conduct) the project in the same year before learning about the program (FR3 = 1).
- The budget would have accommodated the project's full cost in the absence of the program rebate (FR4 = 1).
- They would have purchased the same or higher efficiency measure within one year in the absence of the program ((FR5 = 1 OR (FR7 = 1 OR 2)) AND (FR8 = 1 OR 2)).

The participant survey also included several consistency checks to verify a participant's free-ridership status. These consistency checks provide additional information about the participant's decision to install the program-provided measures and are used to substantiate their classification as a full-free-rider or non-free-rider. Consistency check questions include whether the participant received a recommendation to install a piece of equipment and how influential that recommendation was on their decision. We also asked how influential the program incentive and other program assistance were on their decision to install the efficient measure. After reviewing these consistency questions, in 2024, we adjusted the free-ridership score for 13 respondents. Four respondents indicated the incentive was *very important* in their decision to install the equipment/perform the tune-up at the time they did, two respondents indicated their contractor was *very important* in their decision to do the project, and seven respondents said the rebate was an important factor in their decision to make the energy-saving improvements through the program.

The survey assesses spillover by asking about recent installations of any additional energy-efficient improvements since program participation *without* EAL's financial assistance. Then, respondents reported the importance of their experience in Entergy's Large C&I program on their decision to install these additional improvements. Full savings resulting from the measure were attributed to the program as spillover if the respondent said *very important*, and we attributed half-savings to the program if the respondent said *somewhat important*. Respondents who stated that their experience was *not at all important* or *not very important* received no spillover savings.

We estimated free-ridership and spillover rates for each respondent using the methodology described above. Individual free-ridership and spillover rates were then weighted to adjust for proportional sampling differences, non-response, and gross energy savings to calculate overall estimates representative of the program population. NTG ratios were then calculated using the following equation:

$$NTG\ Ratio = 1 - Free\text{-}Ridership + Spillover$$

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9.6.2 Detailed Net-to-Gross Results

The participant survey resulted in an overall NTG ratio of 100.7 percent, including free-ridership and spillover. Overall, free-ridership was low (0.7 percent), and just 1.4 percent of spillover was observed, resulting in an overall NTG ratio of 100.7 percent. This finding is supported by interviews conducted with trade allies: eight of nine trade allies interviewed said that their sales and installations of energy-efficient equipment would have been lower in the past 12 months in the absence of the program. We present results at the measure category level to understand how measures contribute to the overall results. Most measures had only a few responses, so care should be taken when reviewing these results. Refrigeration measures had the highest free-ridership (five percent) compared to the other measures. Table 151 below summarizes NTG results.

The EM&V team recommends an NTG ratio for each measure category where sufficient survey responses exist (ten or more). For the remaining categories, we recommend using the overall program average of 100.7 percent.

Table 151. Large Commercial and Industrial Solutions—Net-to-Gross Results by Measure Category

Measure category	Free-ridership responses	Free-ridership	Spillover responses	Spillover	NTG
CoolSaver	12	3.0%	22	2.0%	99.0%
Custom HVAC	3	0.0%	5	0.0%	100.0%
Custom other	5	0.0%	10	0.1%	100.1%
Domestic hot water	1	0.0%	2	0.0%	100.0%
Envelope	24	0.0%	26	1.7%	101.7%
HVAC	7	3.8%	7	0.0%	96.2%
Lighting	44	3.2%	84	5.2%	102.0%
Lighting-new construction	8	0.0%	9	0.0%	100.0%
Other	1	0.0%	1	0.0%	100.0%
Refrigeration	11	5.2%	11	1.1%	95.9%
Motors	0	N/A	0	N/A	N/A
Overall	**116**	**0.7%**	**177**	**1.4%**	**100.7%**

9.6.2.1 Free-Ridership

Feedback from participants suggests that the program was highly influential in most participants' decision to install energy-efficient measures, resulting in 1 percent free-ridership. Fifty-seven out of 109 respondents (52 percent) said they were *not* planning to purchase and install their rebated energy efficiency measures in the same year before learning about the program. In addition, 58 percent of respondents said their budget would *not* have accommodated the upgrades' full cost had the program rebate not been available (64 respondents). Forty-seven percent of respondents said they would have purchased the exact same upgrade in the absence of the program (49 respondents). Table 152 presents free-ridership results.

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Table 152. Large Commercial and Industrial Solutions—Free-Ridership Results

Surveyed (n)	Free-ridership
116	0.7%

9.6.2.2 Spillover

Twelve of the 92 respondents assessed for spillover reported installing additional energy-efficient equipment of the same type resulting in attributable spillover savings. Five of the twelve said their experience with the program was *not at all important* or *not very important* in the additional project and, therefore, not eligible for spillover. The eligible measures included four LEDs and sensors, one motors project, one water savings project, and one HVAC repairs project. In addition to these projects, 16 of 88 respondents indicated they installed additional energy-efficient equipment of a different type that we could attribute to spillover savings. Four of the 16 regarded their experience with the program as *not at all important* in their decision to install the additional equipment, and one of the 16 could not recall what type of equipment was installed. Of the remaining 11 respondents with eligible projects, seven reported installing LED bulbs, three installed AC units, one installed T8 linear fluorescent lamps, one installed lighting controls, and one installed smart thermostats. Some respondents reported installing more than one eligible measure. The additional savings attributed to these measures accounted for a spillover rate of just over 1 percent. Table 153 presents the spillover results from the participant survey.

Table 153. Large Commercial and Industrial Solutions—Participant Spillover Results

Surveyed (n)	Spillover
177	1.4%

9.7 OVERALL SAVINGS ESTIMATES

The ArchEE tracking system contained the key assumptions and parameters to calculate measure savings. After performing evaluation savings calculations claimed by Large C&I Solutions across a sample of desk reviews and site visits, the EM&V team found discrepancies in some measure categories. The adjustments that had the most considerable impact on energy savings were from *custom-other* projects with calculation errors and parameters adjusted from on-site inspections. The adjustments that had the most considerable impact on demand savings were from *other* projects with HVAC baseline efficiencies used in the reported savings which differed from the current federal standard.

The EM&V team calculated savings across the program measures based on the tracking data review and desk review results. The overall Large C&I Solutions evaluated savings resulted in lower energy savings (99.6 percent kilowatt-hour realization rate) and higher demand savings (104.3 percent kilowatt realization rate) than those calculated by the program implementer. Final evaluated savings for the *tune-up* measures were based on adjustments made during the tracking system review. All other measures' evaluated savings results were based on desk review and site-visit level adjustments by sampled strata. The tracking system informed qualitative findings and served as a guide for potential issues for investigation during desk reviews.

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The overall realization rates were affected most by variances between the claimed and evaluated savings for *custom-other* (for kilowatt-hour savings) and *other* and *CEI* (for kilowatt savings) measures. *Custom—other* had adjustments resulting from a transcription error on HVAC efficiencies, and a methodology change for VFDs to ECMs. *Other* measures had adjustments for HVAC baseline efficiencies that did not match the current federal standard. Finally, *CEI* projects had three projects with calculation errors.

Table 154 shows that *custom-other* and *other* measures had the most significant realization rate adjustments and the most significant gross changes in energy and demand savings.

Table 154. Large Commercial and Industrial Solutions—Final Evaluated Energy Savings and Realization Rates by Measure Strata

Strata	Ex-ante savings		Ex-post savings		Realization rate		Data source
	kW	kWh	kW	kWh	kW	kWh	
Custom—CEI	8,892	49,881,719	8,507	49,908,365	95.7%	100.1%	Desk reviews
Custom—other	2,096	13,558,977	2,074	13,270,737	98.9%	97.9%	Desk reviews and site visits
Custom—early review	1,255	11,118,439	1,260	11,121,042	100.4%	100.0%	Desk reviews and site visits
Lighting-deemed	1,860	10,962,992	1,869	11,003,577	100.5%	100.4%	Desk reviews and site visits
Lighting—non-deemed	1,254	12,260,941	1,251	12,246,479	99.8%	99.9%	Desk reviews and site visits
Other	557	6,898,926	1,666	6,764,265	299.0%	98.0%	Desk reviews and site visits
Tune-ups	477	1,449,243	477	1,412,070	100.1%	97.4%	Tracking system and M&V review
Total	**16,391**	**106,131,237**	**17,103**	**105,726,536**	**104.3%**	**99.6%**	

9.8 QUALITY CONTROL/QUALITY ASSURANCE PROCESSES

EAL worked with the implementer CLEAResult to develop a quality management process for all EAL commercial programs. This process can be used for projects with or without a trade ally. No changes were made to this procedure in PY2024.

For trade-ally projects, CLEAResult emphasizes trade ally training to remind trade allies of program processes, technical requirements for measures, application requirements, and awareness of the QC process. QC protocols include clear pass/fail thresholds for addressing trade ally performance. During the post-inspection of any project (trade-ally-driven or not), the fail condition results if the work scope is significantly incomplete, the efficient measures are found to be ineligible, or there are safety or code issues with the installation. A failed project causes the trade ally to be removed from the reduced inspection rate list that the program maintains and is put under probationary status. Once a trade ally is removed, that contractor must complete five consecutive projects without "failures" to be returned to the reduced inspection rate list. For a trade ally to qualify for the reduced inspection rate, they must complete five consecutive projects without failure, as determined by the program implementer.

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To be eligible for the program, customers must sign a customer agreement; as part of this agreement, the customer is willing to allow a field inspector to perform a QC inspection. These inspections could happen to any project regardless of scope. An inspection form was developed to perform standardized and consistent inspections to ensure the equipment is being used according to the guidelines outlined in the customer agreement.

Below are the steps that are followed during the QA/QC process, as outlined in the Quality Control and Assurance Process Manual:

- enrollment and customer verification,
- project documentation and completeness review,
- pre-engineering QC and approval,
- pre-installation inspection,
- pre-installation inspection corrections—trade-ally-driven projects,
- post-installation QC,
- post-installation inspection,
- post-installation inspection corrections—trade-ally-driven projects,
- post-engineering approval, and
- post-project review and closeout.

For all projects, the QA/QC process begins with verification that customers are eligible for participation in the program. Next, project documentation (including contact information, signed proposal, W9 forms, and pre-installation photos) is verified to be complete. Following the documentation check, the engineering team at CLEAResult checks to ensure that the project is installing eligible equipment and that savings parameters and calculations are accurate. For QA, the program staff also conducts reviews of each incentive application. After the engineering QC check, proposals that do not pass all aspects of the review are rejected and sent back for completion.

The next stage in the QA/QC process occurs during the pre-installation inspection stage, where pre-installation inspections are conducted to confirm pre-installation conditions. These inspections are completed for 100 percent of *custom* projects and the largest (approximately ten percent) trade-ally projects identified by kilowatt-hour savings. For Large C&I Solutions, larger projects are defined as those with savings estimated at over 150,000 kWh. Inspections are also completed for all *prescriptive* projects submitted by a non-trade ally or submitted by a trade ally under probation. A minimum of 20 percent of all other projects under 150,000 kWh are also inspected. Also, for trade allies who are not under probationary status, at least ten percent of their total project quantities submitted are pre- or post-inspected. Any findings during the pre-inspection stage are returned to the trade ally to make corrections before the project may proceed.

Following the project's installation, a post-installation QC check is performed via a review of documentation to verify invoicing, any changes to the project, and a review of submitted photos. Any findings during this QC check are again returned to the trade ally to make corrections before the project proceeds. An on-site inspection is then conducted following the same sampling methodology as detailed in the pre-installation inspection above.

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At the final stage of the process, a final engineering review of the post-installation notes, completeness of documentation, and post-inspection photos is performed. Project savings calculations or incentives are adjusted as appropriate. The project and all required documentation are submitted to EAL for approval and closeout when this is complete.

As part of Large C&I Solutions evaluation activities, the EM&V team assessed the program's documentation and the 70 sampled projects used to inform the impact evaluation. The documentation included:

- program manual;
- program tracking system/database extracts;
- supplemental project-level documentation:
    - customer proposals and project agreements,
    - invoices,
    - pre-inspection form (where applicable),
    - post-inspection form (where applicable), and
    - photographic documentation (where applicable).

As noted in the prior sections, the EM&V team confirmed that the information presented in the ArchEE tracking system was, for the most part, accurate compared to that in the project documentation. In general, the documentation provided project information that aligned with the stated QC goals, though the EM&V team found three specific areas for improvement:

1. Ensure photographic documentation provided is clear and legible and include nameplate photos of *lighting* model numbers and *HVAC* units, when possible,
2. Provide *lighting* specification sheets for fixtures/lamps without DLC or ENERGY STAR certification.

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10.0 SMALL BUSINESS SOLUTIONS

The Small Business Solutions (SBS) program offers small commercial customers cash and non-cash incentives to implement energy efficiency improvements. The program assists small business customers by analyzing facility energy use and identifying energy efficiency improvement projects. The program targets small business customers with a peak electric demand of less than 100 kW. The program consults eligible customers to identify energy savings opportunities and available financial incentives. The program utilizes a network of pre-qualified trade allies to analyze customers' energy use, identify energy efficiency improvement projects, and install the recommended measures.

The SBS program is designed to overcome the unique market barriers restricting small businesses' ability to implement energy-efficient technologies and practices. These market barriers include:

- Small business owners often lack technical expertise or time for improvements in energy efficiency. Most of these businesses lack the time or resources to focus on energy efficiency improvements.
- Most small businesses have limited access to investment capital, which means that business owners may not be able to afford the efficiency upgrade without immediate assistance from the program.

The program is implemented by CLEAResult, which provides recruitment, marketing, outreach, and training to trade allies. Along with participating trade allies, the program performs energy assessments, directly installs measures (e.g., light-emitting diodes (LED), low-flow faucet aerators, pre-rinse spray valves, weather stripping), conducts pre- and post-implementation inspections, maintains the program quality assistance/quality control (QA/QC) standards, and administers the incentive process. The program also includes program tracking.

In support of the impact evaluation, the evaluation, measurement, and verification (EM&V) team conducted a tracking system review, desk reviews on a randomly selected sample of 25 projects, and a review of program documentation. The EM&V team also completed ten site visits for this program. Program staff interviews focused on discussing PY2024 progress and challenges and implementing BY2023 evaluation recommendations presented in the executive summary.

Table 155. Small Business Solutions—Data Collection and Evaluation Activities

Net-to-gross (NTG) approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site M&V	Metered data analysis[93]
Updated in PY2022 from process evaluation research	Program staff interviews (2) Materials review	Census	25	10	None

[93] This column refers to EAL customer meter data provided to the EM&V team as opposed to primary metered data collected as part of the on-site measurement and verification (M&V).

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10.1 KEY FINDINGS

Based on the PY2024 program tracking data, the SBS program incentivized energy efficiency measures to 470 unique participants[94] through 28 trade allies. Table 156 provides the program's claimed savings by measure category, where most claimed participants (56 percent) and savings (56 percent) were attributable to lighting measures. However, PY2024 also saw significant increases in savings attributed to tune-ups (7.3 percent of savings in BY2023 to 27.9 percent in PY2024). One *custom* project claimed savings in PY2024, compared to none in BY2023.

Table 156. Small Business Solutions—Reported Participation and Savings[95]

Measure category	Trade allies	Participants**	Projects	Program savings (kWh)	Percentage of program savings (kWh)
Custom*	0	24	25	126,872	1.4%
Domestic hot water*	0	12	12	19,898	0.2%
Envelope*	0	50	51	1,295,727	14.6%
Lighting	16	263	276	4,950,362	55.6%
Refrigeration*	0	11	11	24,449	0.3%
Tune-ups	11	137	738	2,480,066	27.9%
Total	**27**	**470**	**1,102**	**8,897,374**	**100.0%**

* The implementer directly installed all measures.

** A participant may install measures across multiple measure categories or multiple projects. Thus, the total count of participants and projects may not equal the sum of individual rows by measure category.

In PY2024, the SBS program reported 8,897 MWh in gross energy savings and 1.55 MW in gross demand savings. Table 157 shows the reported and evaluated savings across the program. The program did not meet its energy and demand savings planning goals, achieving 51 percent of the energy savings goal and 51 percent of the demand savings goal.

Table 157. Small Business Solutions—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	8,897	8,757	98.4%	100.0%	8,754	3.5%
Demand savings (MW)	1.55	1.47	94.9%	100.0%	1.47	1.8%

[94] A unique participant is based on unique utility account numbers.

[95] ArchEE extract dated January 20, 2025

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Table 158. Small Business Solutions—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	17,147	8,754	51.1%
Demand savings (MW)	2.9	1.5	50.6%

The SBS evaluated energy and demand savings were lower than reported for both energy savings (98.4 percent kWh realization rate) and demand savings (94.9 percent kW realization rate). The main drivers of the realization rates were adjustments to lighting projects during the desk review and on-site review process. The most significant adjustment was for a lighting project that used the incorrect building type and assigned an exterior light as interior. The other sources of lighting adjustments included quantity, retrofit lighting wattage, and baseline lighting fixture type.

The researched NTG ratio is 100.0 for *prescriptive* measures and 99.9 for *tune-up* measures from research conducted in PY2022. No NTG updates were completed in PY2024.

10.2 RECOMMENDATIONS

The EM&V team has identified key findings and recommendations for consideration by Entergy Arkansas, LLC (EAL) (Table 159), which primarily focus on improving the realization rate in the following program year and increasing the transparency, accuracy, and evaluability of program savings in the future for the SBS program.

Table 159. Small Business Solutions—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation #1:** Increase QA/QC on building type selection for lighting retrofit projects.	The EM&V team found five instances of lighting retrofit projects using the incorrect building type. These adjustments included adjustments from *service* to *warehouse, service* to *public assembly*, *service* to *health care: outpatient*, *health care: outpatient* to *education: college, university, vocational, day care, and K-12 w/ summer session*, and *retail: strip mall* to *office.* The adjustments in building type resulted in reduced evaluated demand savings for all five projects and reduced evaluated energy savings in four of the five projects. The EM&V team recommends more careful QA/QC to ensure that the operations within the buildings fit the building type selected. The *service* building type should be reviewed so it is not applied to buildings that are defined by other building types.
	Recommendation #2: Increase QA/QC on baseline and retrofit lighting fixture quantities.	The EM&V team found instances where the documentation did not support reported quantities of baseline and retrofit lights. One project claimed that five fewer exterior lights were removed between baseline and retrofit but did not document the locations where the lighting was removed. Another project reported 15 interior cooler lights, but only 13 were shown in the photo documentation provided. The EM&V team recommends more careful QA/QC of lighting quantities to ensure that they are supported by photo documentation.

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Type	Recommendation	Key finding
	Recommendation #3: Review savings algorithms for *Wi-Fi thermostat* measures to ensure consistency.	The EM&V team identified 22 projects where the reported fuel type was *air conditioning with electric resistance heat*, but savings were calculated using deemed savings values for a *heat pump* unit. In addition, there were three projects where the reported fuel type was *heat pump,* but savings were calculated using deemed savings values associated with an *air conditioning* unit. The EM&V team recommends reviewing the deemed savings values and calculation algorithms for *Wi-Fi thermostat* measures to ensure consistency based on the tracked fuel type.
	Recommendation #4: Include lighting specification sheets for some fixtures in project documentation.	The EM&V team found that manufacturer specification sheets were missing for all reviewed lighting projects. These sheets are crucial for LED exit signs, as DLC or ENERGY STAR (ES) certification sheets are not available for this type of lighting. Including manufacturer specification sheets would enhance clarity regarding similar lighting types that may vary in color temperature, voltage, and other features, all of which can affect the equipment's qualification and fixture input wattage. The EM&V team recommends that lighting specification sheets be provided for LED exit signs, fixtures without DLC/ES certification, and any lighting models that have variations in temperature, voltage, and other features that could impact equipment qualification and fixture input wattage.

Table 160. Small Business Solutions—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Increase QA/QC on lighting projects where significant renovations take place.
	  ○ Continuing.
	• Enhance QA/QC of space conditioning type on lighting projects.
	  ○ Continuing.
	• Enhance QA/QC of GSL baseline wattage.
	  ○ Complete.
	• Increase QA/QC on building type selection for lighting retrofit projects.
	  ○ In progress.
	• Increase QA/QC on baseline lighting fixtures and quantities.
	  ○ In progress.
	• Review savings algorithms for Wi-Fi thermostat measures to ensure consistency.
	  ○ In progress.

BY2023 process recommendations	• Investigate opportunities to increase energy efficiency program participation amongst small businesses considering barriers that were encountered during BY2023, including rising baselines, persistent inflationary pressures, and high interest rates. This should include comprehensiveness of measures installed. ○ In progress.

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10.3 METHODOLOGY

This section summarizes the methodologies used for the evaluation of the SBS program.

10.3.1 Impact Evaluation

The evaluated savings results are based on calculations and adjustments made during the tracking system review, 25 engineering desk reviews, and 10 site visits. Savings adjustments were made at the project level. Final evaluated savings for the *tune-up* measures are based on adjustments made during the tracking system review. For all other measures, evaluated savings results are based on desk review and site-visit level adjustments by sampled strata. The tracking system informed qualitative findings and served as a guide for potential issues for investigation during desk reviews.

To perform the PY2024 impact evaluation, the EM&V team completed the following activities:

- staff interviews and ongoing discussions;
- program website review of eligible measures, incentives, and participating trade allies;
- program manual and supplemental documentation review;
- program tracking system/database reviews;
- review of the tracking system and M&V database for *tune-ups* and *commercial Wi-Fi thermostats*;
- engineering desk review of 25 sampled projects;
- on-site M&V of 10 sampled projects that also received desk reviews.

Table 161 shows the sample design and achieved sample sizes for the different data collection types employed for the impact evaluation effort.

Table 161. Small Business Solutions—Data Collection Efforts and Project Types

Data collection activity	Design sample	Achieved sample	Custom projects	Prescriptive projects
Staff interviews	2	2	N/A	N/A
Tracking system data review[96]	Census	Census	N/A	433
Engineering desk review	25	25	N/A	25
On-site M&V visit[97]	10	10	N/A	10

[96] ArchEE extract dated July 10, 2024. A count of prescriptive projects is the quantity of unique *JobId* numbers in the tracking database.
[97] On-site visits were recruited from the list of participants that received desk reviews, nesting the on-site sample within the desk review sample.

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Most of the measures incentivized by the SBS program in PY2024 are currently included in the Arkansas Technical Reference Manual (TRM) Version 9.2 (TRM 9.2), Volume 2. Specific sections of TRM 9.2 associated with the savings developed for the SBS program measures are provided in Table 162. These prescriptive algorithms and assumptions were the basis of the savings methodology used by the implementer and the EM&V team for energy and demand savings analysis purposes.

Table 162. Small Business Solutions—TRM 9.2 Prescriptive Algorithms Utilized

Measure category	TRM 9.2 section	TRM 9.2 measure name
Domestic hot water	3.3.2	Faucet aerators
	3.3.5	Low-flow showerheads
Envelope	3.2.10	Commercial door air infiltration
Refrigeration	3.5.6	Strip curtains for walk-in coolers and freezers
	3.5.7	Door gaskets for walk-in and reach-in coolers and freezers
Lighting	3.6.2	Lighting controls
	3.6.3	Lighting efficiency

Air conditioning and *heat pump* tune-up measures, *custom – non-heating and cooling, commercial Wi-Fi thermostats*, *overhead door weather stripping*, and *PTAC sealing* measures were incentivized through the SBS program. The *custom – non-heating and cooling* measure corresponds with auto door closers for refrigerated coolers and freezers; the savings methodology does not adhere to TRM 9.2 but follows a white paper developed by CLEAResult, based on Illinois TRM 12.0, section 4.6.1. *Overhead door weather stripping* and *PTAC sealing* measures do not adhere to TRM 9.2 but follow prescriptive approaches developed by CLEAResult based on the TRM algorithms for *commercial door air infiltration*. Additional project details outside of ArchEE are required to evaluate the *tune-up* measures. A separate tracking system review was conducted for all *tune-up* measures across the three commercial programs.

Table 163. Small Business Solutions—Non-TRM Prescriptive Algorithms Utilized

Measure category	Measure description
Custom	Custom – Non-heating and cooling
Tune-ups (formerly CoolSaver)	Commercial AC post-test-out
	Commercial AC pre-clean
	Commercial central air conditioner (tune-up)
	Commercial heat pump (tune-up)
	Commercial HP post-test-out
	Commercial HP pre-clean
	Commercial Wi-Fi thermostat
Envelope	Overhead door weather stripping
	PTAC sealing

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10.3.1.1 Tracking System Review

The EM&V team reviewed all tracking data to assess the extent to which it provided the key input parameters needed for TRM 9.2-based algorithms. The tracking system data review began using TRM 9.2 as a reference in our review of measure-level savings assumptions. Sections of TRM 9.2 utilized for the tracking system review are described above in Table 164.

The EM&V team reviewed the tracking systems linkage to TRM 9.2 deemed savings algorithms used to estimate savings. This review was completed across a census of the program measures at the end of Q3[98]. The utility's tracking database presents all the critical input variables and assumptions necessary for savings calculations. This review is conducted mid-year to help facilitate changes in the algorithm applications before the end of the year, where they might cause discrepancies in reported versus verified savings. After the measure-level review, the EM&V team verified energy savings calculations for engineering fundamentals, appropriateness, and accuracy.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system are consistent with the savings outlined in TRM 9.2 used to estimate project savings. Third, it assessed the ability of the tracking system to support future evaluation needs.

Table 164. Small Business Solutions—PY2024 Mid-Year[99] Tracking System Reported Energy Savings by Measure Category

Measure	Reported savings	
	kW	kWh
Domestic hot water	4.7	14,828
Envelope	30.7	637,744
Lighting	459.0	2,447,475
Refrigeration	1.8	15,445
Tune-up and Wi-Fi thermostat	183.2	1,022,875
Total	**679.4**	**4,138,368**

10.3.1.2 Tune-Up and Wi-Fi Thermostat Measurement and Verification Review

The EM&V team reviewed all the *tune-up* and *commercial Wi-Fi thermostat* measures with a comprehensive tracking system review, supplemented with engineering reviews of the M&V and deemed savings methodologies. These measures are tracked in ArchEE but have supplemental data in external databases necessary for evaluation. The tracking system reviews focused on replicating individual measure savings results and determining population variances.

[98] Tracking data downloaded July 10, 2024.
[99] Tracking system data through July 10, 2024 was used for the evaluation. Database downloaded from ArchEE on July 10, 2024.

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10.3.1.3 Desk Reviews and Site Visits

In PY2024, the primary impact evaluation activities included desk reviews and on-site assessments. Sampling was conducted via stratified random sampling of kWh savings at the project level and implemented according to the measure category – lighting and other.

Lighting projects were split into three strata based on the project's kWh savings. Lighting strata were constructed using program tracking data spanning PY2021 through BY2023. Using these tracking data for each program year spanning PY2021 through BY2023, the following process was taken for Small Business:

1. Projects were ordered from smallest to largest in terms of kWh savings, and then the cumulative share of savings was calculated for this ordered list.

2. Projects representing the first 1/3rd of total lighting project savings were sorted into the low-savings stratum, with the highest-saving project within this stratum representing the upper bound on savings for the low-savings stratum.

3. The projects representing the next 1/3rd of lighting project savings were then sorted into the medium-savings stratum, with the highest-saving project within this stratum representing the upper bound on savings for the medium-savings stratum.

4. The remaining projects representing the top 1/3rd of lighting project savings were sorted into the high-savings stratum, with the highest-saving project within the medium-savings stratum representing the lower bound on savings for the high-savings stratum.

5. PY2024 lighting stratum cutoffs were determined by taking the mean of cutoffs for the low-savings, medium-savings, and high-savings stratum cutoffs found for PY2021, PY2022, and BY2023.

On-site samples were nested samples of the desk reviews, meaning that all projects receiving an on-site assessment also received a desk review. Projects with variances that could be cleared up during the site visit were selected first, with remaining site visits randomly chosen from within the desk review sample. Table 165 summarizes the result of the sampling for the SBS program.

Table 165. Small Business Solutions—Summary of Sampled Savings

Measure category	Projects	Projects sampled	Reported kWh	Reported kW
Lighting subtotal	**276**	**19**	**4,950,362**	**945.4**
High ≥53.4 MWh	17	5	1,304,304	235.8
Medium ≥23.3 MWh and <53.4 MWh	50	7	1,743,539	327.0
Low <23.3 MWh	208	7	1,902,519	382.6
Other	**88**	**6**	**1,466,946**	**91.3**
Total	**364**	**25**	**6,417,308**	**1,036.8**

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10.4 DETAILED IMPACT EVALUATION RESULTS

For SBS, the evaluated energy and demand savings were lower than reported savings for energy (98.4 percent kWh realization rate) and demand (94.9 percent kW realization rate). The main drivers of the realization rates were adjustments to lighting projects during the desk review and on-site review process. The most significant adjustment was for a lighting project that used the incorrect building type and assigned an exterior light as interior. The other sources of lighting adjustments included quantity, retrofit lighting wattage, and baseline lighting fixture type.

Corrections and adjustments to *lighting* projects that contributed to reduced energy and demand savings (kWh) savings were found during the desk reviews to be primarily due to:

- Adjustments to the building type to match the main function of the building during the desk review.
- Corrections to the quantity of installed lights to match the inspection reports and photos during the desk review.
- An adjustment in the baseline fixture code during the desk review.
- A correction in the location of the fixture from interior to exterior during the desk review.

Corrections to *tune-up* and *Wi-Fi thermostat* projects that contributed to reduced energy (kWh) savings were found to be primarily due to:

- *Wi-Fi thermostat* and *central air conditioning tune-up* measures which used an incorrect unit type (e.g., heat pump energy savings instead of air conditioning energy savings) in savings algorithms.

10.4.1 Participant Characterization

Several different measures are provided to participants through the program. Within the tracking system, qualifying products are assigned to unique measure names. The mapping of these measure names to measure categories is provided below.

Table 166. Small Business Solutions—Mapping to Measure Category

Measure description	Measure category
Custom – Non-heating and cooling	Custom
Commercial showerheads	Domestic hot water
Faucet aerators	Domestic hot water
Commercial door air infiltration	Envelope
Overhead door weather stripping	Envelope
PTAC sealing	Envelope
Halogens	Lighting
HIDs	Lighting
Integrated-ballast compact fluorescent lamps (CFL)	Lighting
Integrated-ballast LED lamps	Lighting

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Measure description	Measure category
LEDs	Lighting
Lighting controls	Lighting
Magnetic ballast T5 or premium T8 retrofit of T12	Lighting
Modular CFLs and CCFLs	Lighting
Other linear fluorescents	Lighting
Outdoor-halogens	Lighting
Outdoor-HIDs	Lighting
Outdoor-integrated-ballast compact fluorescent lamps (CFL)	Lighting
Outdoor-integrated-ballast LED lamps	Lighting
Outdoor-LEDs	Lighting
Outdoor-magnetic ballast T5 or premium T8 retrofit of T12	Lighting
Outdoor-modular CFLs and CCFLs	Lighting
Outdoor-other linear fluorescents	Lighting
Refrigeration door gaskets	Refrigeration
Refrigeration strip curtains	Refrigeration
Commercial AC post-test-out	Tune-ups
Commercial AC pre-clean	Tune-ups
Commercial central air conditioner (tune-up)	Tune-ups
Commercial heat pump (tune-up)	Tune-ups
Commercial HP post-test-out	Tune-ups
Commercial HP pre-clean	Tune-ups
Commercial Wi-Fi thermostat	Tune-ups

Table 167 outlines the claimed number of program participants and the percentage of savings by measure category in PY2024. The majority of claimed participants (56 percent) and savings (56 percent) were attributable to lighting measures. However, PY2024 also saw significant increases in savings attributed to tune-ups (7.3 percent of savings in BY2023 to 27.9 percent in PY2024). One *custom* project was claimed in PY2024, compared to none in BY2023.

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Table 167. Small Business Solutions—PY2024 Reported Participation and Savings by Measure Category

Measure category	Participants*	Projects*	Program savings		Percentage of program savings	
			kW	kWh	kW	kWh
Custom	24	25	21.2	126,872	1%	1%
Domestic hot water	12	12	6.4	19,898	0%	0%
Envelope	50	51	61.0	1,295,727	4%	15%
Lighting	263	276	945.4	4,950,362	61%	56%
Refrigeration	11	11	2.8	24,449	0%	0%
Tune-ups	137	738	508.9	2,480,066	33%	28%
Total	**470**	**1,102**	**1,545.6**	**8,897,374**	**100%**	**100%**

* A participant is a unique account described by the ArchEE data field *AccountNumber*. A project is a unique job number defined by the ArchEE data field *JobId*. A participant may install measures across multiple measure categories and multiple projects. As a result, the total count of participants and projects may not equal the sum of the counts by measure category.

Table 168 outlines the savings and percentage of savings by measure in PY2024. *Interior LEDs* were the dominant measure in PY2024, accounting for 60 percent of claimed gross kW savings and 45 percent of claimed gross kWh savings. *Commercial Wi-Fi Thermostats* were the second most dominant measure in PY2024, accounting for 14 percent of claimed gross kW savings and 21 percent of claimed gross kWh savings. *Outdoor LEDs* were the third most dominant measure in PY2024, accounting for 9 percent of claimed gross kWh savings, although they did not contribute to kW savings.

Table 168. Small Business Solutions—PY2024 Reported Participation and Savings by Measure

Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Custom				
Custom – non-heating and cooling	21.2	126,872	1%	1%
Domestic hot water				
Commercial showerheads	<1.0	351	<1%	<1%
Faucet aerators	6.3	19,547	<1%	<1%
Envelope				
Commercial door air infiltration	5.0	99,799	<1%	1%
Overhead door weather stripping	31.7	547,872	2%	6%
PTAC sealing	24.2	648,055	2%	7%

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Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Lighting				
Halogens	4.0	14,167	<1%	<1%
HIDs	4.3	13,673	<1%	<1%
Integrated-ballast compact fluorescent lamps (CFL)	<1.0	455	<1%	<1%
Integrated-ballast LED lamps	0.9	3,989	<1%	<1%
LEDs	922.5	4,035,993	60%	45%
Lighting controls	1.5	6,837	<1%	<1%
Magnetic ballast T5 or premium T8 retrofit of T12	6.7	30,921	<1%	<1%
Modular CFLs and CCFLs	2.1	8,554	<1%	<1%
Other linear fluorescents	3.4	15,062	<1%	<1%
Outdoor-halogens	0.0	1,998	0%	<1%
Outdoor-HIDs	0.0	0	0%	0%
Outdoor-integrated-ballast compact fluorescent lamps (CFL)	0.0	0	0%	0%
Outdoor-integrated-ballast LED lamps	0.0	11,457	0%	<1%
Outdoor-LEDs	0.0	790,021	0%	9%
Outdoor-magnetic ballast T5 or premium T8 retrofit of T12	0.0	9,882	0%	<1%
Outdoor-modular CFLs and CCFLs	0.0	0	0%	0%
Outdoor-other linear fluorescents	0.0	7,353	0%	<1%
Refrigeration				
Refrigeration door gaskets	<1.0	1,026	<1%	<1%
Refrigeration strip curtains	2.7	23,423	<1%	<1%
Tune-ups				
Commercial AC post-test-out	32.3	58,455	2%	1%
Commercial AC pre-clean	28.5	52,303	2%	1%
Commercial central air conditioner (tune-up)	219.2	414,192	14%	5%
Commercial heat pump (tune-up)	11.9	34,110	1%	<1%
Commercial HP post-test-out	1.7	5,667	<1%	<1%
Commercial HP pre-clean	2.4	6,403	<1%	<1%
Commercial Wi-Fi thermostat	212.8	1,908,936	14%	21%
Total	**1,545.6**	**8,897,374**	**100%**	**100%**

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Table 169 shows the incentive structure for PY2024.

Table 169. Small Business Solutions—PY2024 Program Incentives

Measure	Incentive as of 1/1/2020* per kWh
All lighting (including refrigeration lighting)	$0.17
Interior lighting controls	$0.17
HVAC replacement	$0.17
Direct install	Full cost
Window film	$0.35
All refrigeration	$0.30
Duct sealing	$0.35
Ceiling insulation	$0.35

* Source: PY2024 Program Manual Small Business Solutions

10.4.2 Program Documentation and Tracking Data Review

To understand the SBS program, the EM&V team interviewed program staff and reviewed all information available on EAL's website related to the program and supplemental documentation provided by EAL and CLEAResult. The EM&V team received the following documentation related to the program:

- ArchEE data tracking system extract containing PY2024 participant information and savings;
- Supplemental project-level documentation received during quarterly data requests for sampled accounts, which typically included:
    - Signed customer proposals and project agreements—sometimes files included initial and final proposals if projects had changed during development;
    - Customer proposals that typically included a detailed inventory of site-captured measure-level details such as:
        - *Commercial door air infiltration*, *domestic hot water*, and *refrigeration* measures (e.g., PTAC sealing, weather stripping, low-flow showerheads, refrigeration strip curtains) were all directly installed by the implementer. A Direct Install Report typically inventoried the type of measure and relevant parameters (e.g., the gap width sealed, the new weather stripping length installed by room, area of room). Additional notes typically included the HVAC system type (for the facility or by specific rooms if they varied). Legible nameplate photos verifying the HVAC or water heater type were mostly but not always provided. Finally, photo documentation of a sample of doors with their existing condition and gap width, noted by a view of a tape measure, was found.

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        - *Lighting* and *lighting controls* measures included existing and new fixture types, make and model numbers, wattages, quantity, and control type. Also, Design Lights Consortium (DLC) and ENERGY STAR® certification sheets were provided for all 19 sampled lighting projects. Itemized invoices were provided for all lighting projects. Inspection reports were typically not provided; however, either a work order or inspection report was provided for all lighting products sampled. Manufacturer specification sheets were not provided.
    - photographic documentation pre- or post-installation;
- A Quality Control and Assurance Manual for EAL commercial programs, dated February 1, 2023; and
- PY2024 Program Manual for the SBS program obtained from the EAL website.

10.4.3 Detailed Tracking System/Database Review

The ArchEE tracking system, which supplied all participant- and measure-level data, was the primary tool for checking claimed savings and performing evaluation savings calculations. These results were informed and supplemented with the findings from the engineering desk reviews and site visits, as further outlined in the savings calculation results section.

The overall program evaluated tracking system savings resulted nearly identical demand savings (100 percent kilowatt realization rate) and energy savings (100 percent kilowatt-hour realization rate) to those calculated by the program implementer. The evaluated savings are based on adjustments made from completing engineering reviews of the program's tracking data.

Overall, the tracking system review found the following:

- Except for the *overhead door weather stripping* and *tune-up* measures in the SBS program, all measures utilize TRM 9.2, Volume 2 deemed algorithms. The savings equations were confirmed consistent with TRM 9.2. As described above, the *overhead door weather stripping, PTAC sealing,* and *tune-up* measures follow custom approaches developed from assumptions and methodologies in the TRM. The EM&V team confirmed the *overhead door weather stripping* and *PTAC sealing* measures follow the M&V plan through this tracking system review. A tracking system review of the *tune-up* measures was completed to inform *tune-up* evaluated savings.
- The SBS program measures utilize TRM 9.2, Volume 2 deemed savings assumptions, with two notable exceptions. O*verhead door weather stripping* measures use extrapolated savings values based on the *commercial door air infiltration* measure in TRM 9.2. Finally, some *lighting efficiency* measures use site-specific annual operation hours instead of the deemed values in TRM 9.2 for lighting projects.
    - Approximately 1.8 percent of lighting projects use site-specific custom annual operating hours (AOH) as captured from the site and based on the buildings' typical operating hours and hours of occupancy. This approach increased over BY2023, where 0.8 percent of SBS program projects used custom AOH.
- The overall tracking review realization rates were 100.0 percent kW and 100.3 percent kWh, not including the *tune-up* measures. Tracking review realization rates for most measures were at 100 percent.

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Table 170. Small Business Solutions—PY2024 Mid-Year Tracking System Energy Savings and Realization Rates by Measure Category

Measure category	Claimed savings		Evaluated savings		Realization rate	
	kW	kWh	kW	kWh	kW	kWh
Domestic hot water	4.7	14,828	4.7	14,828	100%	100%
Envelope	30.7	637,744	30.9	647,409	101%	102%
Lighting	459.0	2,447,475	459.0	2,447,475	100%	100%
Refrigeration	1.8	15,445	1.8	15,445	100%	100%
Total	**494.4**	**3,100,047**	**494.7**	**3,109,712**	**100%**	**100%**

10.4.3.1 Domestic Hot Water

- No issues found.

10.4.3.2 Envelope

- Project EA-0003231070 (one line item for commercial door air infiltration and one for overhead door weather stripping) selected the incorrect weather zone based on the provided County of Pope. The weather zone for both measures was adjusted from 8 to 7. This adjustment increased energy and demand savings.

10.4.3.3 Lighting

- No issues found.

10.4.3.4 Refrigeration

- No issues found.

10.4.3.5 Tune-Up and Wi-Fi Thermostat Measurement and Verification Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review began using the TRM 9.2, the CoolSaver Program M&V Plan[100], and the Memorandum of Understanding to reference our review of measure-level savings assumptions. The EM&V team reviewed the tracking systems linkage to the TRM deemed savings and supplemental documentation methods used to estimate savings. Following the measure-level review, the EM&V team verified energy savings calculations for engineering fundamentals, appropriateness, and accuracy.

The ArchEE database includes the key data for all projects and reported savings for *AC* and *heat pump tune-up* and *Wi-Fi thermostat* measures, which totaled 738 measures.

[100] The tune-up measure methodology was developed separately under their own CoolSaver Program prior to being included in the Small Business Solutions program.

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A CLEAResult tracking system extract was provided, including pre- and post-test-out projects used as the basis for CLEAResult's PY2021-BY2023 efficiency loss (EL) calculations. The EM&V team reviewed this dataset, examined it for outliers, and calculated the PY2021–BY2023 EL values for two sectors (*commercial* and *residential*) and whether a refrigerant charge adjustment was performed.

The findings from the tune-up tracking system showed similar findings to last year's review. Most key *tune-up* measure data is maintained in a separate database outside ArchEE. The database was useful for the evaluation team to reference during the review. For example, because the *TuneupidComm* field in ArchEE was once again not used in the Small Business program for PY2024 for unknown reasons, the evaluation team mapped the pre-clean projects to the post-test-out measures via supplemental data and communications with CLEAResult.

Finally, as with previous years, *commercial Wi-Fi thermostat* measures still require manual input of deemed energy (kWh/ton) and demand savings (kW/ton) values. This led to many instances of human input error with savings deviations (described in further detail below). Automating this process in the future will allow for more effective QA/QC and reduce the likelihood of errors.

10.4.4 Tune-Up and Wi-Fi Thermostat Measurement and Verification Findings

The EM&V team evaluated CLEAResult's savings calculations by reviewing the M&V sample of participants to confirm the savings methodology used and results obtained, repeating the calculation steps, and making calculation adjustments.

The ArchEE tracking system, which supplied all participant and unit-level data and claimed savings, was the primary tool for checking reported savings and performing evaluation savings calculations.

Detailed findings from the M&V review for *tune-up* and *Wi-Fi thermostat* measures are presented below.

- Twenty-two *commercial Wi-Fi thermostats* measures installed on AC systems with electric resistance heat were using incorrect energy savings. For energy savings, reported savings were calculated as if the thermostat was installed on a heat pump system by including energy savings associated with heat pump heating. The EM&V team adjusted the energy savings only to include the energy savings associated with an AC unit. Ten of the affected project numbers are listed below, with the complete list available upon request:
    - 2022-372979,
    - 2022-385778,
    - 2022-385777,
    - 2022-385774,
    - 2022-384556,
    - 2022-385776,
    - 2022-385775,
    - 2022-385010,
    - 2022-385004, and
    - 2022-385779.

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- Three *commercial Wi-Fi thermostats* measures installed on heat pump systems were using incorrect energy savings. For energy savings, reported savings were calculated as if the thermostat was installed on an air conditioning system. The EM&V team adjusted the energy savings to include the savings associated with heating with a heat pump. The affected project numbers are listed below:
    - 2022-445738,
    - 2022-445737, and
    - 2022-447172.
- One *commercial central air conditioner tune-up* project (2022-406780) conducted on an AC system had its reported savings calculated as if the tune-up was conducted on a heat pump system by including energy savings associated with heat pump heating. The EM&V team adjusted the energy savings only to include the energy savings associated with an AC unit.
- One *commercial HP post test out tune-up* project (2022-392902) conducted on a heat pump system had its reported savings trued up based on if the test in savings estimate (2022-320729) was equal to the evaluated savings rather than the reported savings. The EM&V team adjusted the test in savings to the reported savings. This adjustment increased energy and demand savings for this project.

10.4.5 Engineering Desk Reviews

The EM&V team evaluated CLEAResult's savings calculations by reviewing the program tracking data and project documentation to confirm the savings methodology and results, repeating the calculation steps, and making adjustments.

The engineering desk reviews included reviewing the available project documentation to determine the source of key parameters for the deemed savings protocols from TRM 9.2. After selecting the best source of the key parameters from the available documentation, the savings were calculated based on TRM 9.2 algorithms and compared to the claimed savings.

In addition to the tracking system review, the engineering desk reviews also showed a consistent use of TRM 9.2 algorithms across all the measures claimed in the SBS program. The EM&V team made various minor adjustments to specific projects described in detail in the project review results section below.

The EM&V team completed 25 engineering desk reviews of the SBS program accounts. These projects represented all measure categories in the program, except for *tune-up* measures, and had gross savings of 732,637 kWh, or 8 percent of the total SBS program recorded gross savings of 8,897,374 kWh. This percentage of total program savings is based on ArchEE data from January 15, 2024.

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10.4.5.1 Site Visits

The EM&V team's evaluation plan included conducting ten site visits to SBS program customers. These site visits also received an engineering review, as discussed above. The EM&V team's field inspector recorded the verified quantities, operation, building type, and space condition of each measure observed while on-site and collected additional information on critical parameters. For the SBS program, some of the key data and spot measurements obtained for essential parameters, as applicable, included:

- *lighting* measures: base/new wattage, number of lamps per fixture, lamp/fixture make/model/type, base/new control type, building type, space heating/cooling type, and AOH;
- *envelope* measures: length of the installed door gasket, gap width, and heating/cooling system type.

The site visits found that most parameters recorded in the project documentation to calculate savings were accurate. For all ten site visits, all parameters were verified or were deemed to be reasonable based on the site inspection.

10.4.6 Desk Review and Site-Visit Results

As noted earlier, the PY2024 SBS program impact evaluation efforts included an engineering analysis for a sample of 25 projects and a site visit for 10 of those projects reviewed. For 18 of the projects in the sample, no savings adjustments were made. For the remaining seven projects, the impact evaluation found various discrepancies in the project documentation or the site visit that required adjustments of parameters from the claimed savings estimates. The table below provides project-level realization rates by measure category for the 25 SBS projects reviewed by the evaluation. Detailed descriptions of the seven projects with energy and realization rate adjustments follow Table 171.

Table 171. Small Business Solutions—PY2024 Desk Review and Site Visit Results by Project

EM&V participant ID	Measure stratum	EM&V review type*	Ex-ante savings		Ex-post savings		Realization rate	
			kW	kWh	kW	kWh	kW	kWh
222001	Other	Site visit	0.7	10,934	0.7	10,934	100%	100%
222002	Lighting - low	Site visit	4.1	17,310	4.1	17,310	100%	100%
222003	Lighting - low	Desk review	0.3	8,141	0.3	8,141	100%	100%
222004	Lighting - low	Desk review	2.1	7,376	2.1	7,376	100%	100%
222005	Other	Desk review	0.1	5,445	0.1	5,445	100%	100%
222006	Lighting – high	Desk review	11.7	56,902	11.7	56,902	100%	100%
222007	Lighting – high	Desk review	4.5	104,196	3.8	98,847	86%	95%
222008	Lighting - high	Site visit	5.4	63,811	5.4	63,811	100%	100%
222009	Lighting - low	Site visit	0.7	4,769	0.7	4,769	100%	100%
222010	Lighting - medium	Site visit	2.5	32,227	2.5	32,227	100%	100%
222011	Other	Site visit	1.0	6,013	1.0	6,013	100%	100%

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EM&V participant ID	Measure stratum	EM&V review type*	Ex-ante savings		Ex-post savings		Realization rate	
			kW	kWh	kW	kWh	kW	kWh
222012	Lighting – medium	Desk review	4.9	28,238	4.9	28,238	100%	100%
222013	Lighting - medium	Desk review	7.5	30,805	7.5	30,805	100%	100%
222014	Other	Site visit	2.5	43,771	2.5	43,771	100%	100%
222015	Lighting – low	Desk review	0.5	3,211	0.5	3,211	100%	100%
222016	Lighting - medium	Desk review	1.9	39,584	1.9	39,584	100%	100%
322001	Lighting - medium	Desk review	8.2	33,119	7.4	34,962	90%	106%
322002	Lighting - low	Desk review	1.9	10,288	1.9	10,288	100%	100%
322003	Lighting – medium	Site visit	5.2	28,336	4.9	26,817	95%	95%
322004	Lighting - medium	Desk review	3.4	52,259	3.2	51,362	96%	98%
322005	Lighting - high	Desk review	16.0	56,611	10.2	45,970	64%	81%
322006	Lighting - high	Site visit	13.8	58,769	12.0	58,399	87%	99%
322007	Lighting - low	Desk review	2.3	11,008	1.4	9,388	62%	85%
322008	Other	Desk review	0.2	1,307	0.2	1,307	100%	100%
322009	Other	Site visit	1.3	18,205	1.3	18,205	100%	100%
Total			**102.7**	**732,637**	**92.3**	**714,082**	**90%**	**97%**

* All projects that received an on-site visit also received an engineering desk review.

The project-based savings adjustments are provided below by measure category and EM&V participant ID.

10.4.6.1 Other

The *other* strata consist of prescriptive, non-lighting measures. Six project IDs were selected in the *other* category for the SBS program for desk reviews, with three projects also receiving an on-site visit. Six of the *other* category projects completed *envelope* measures, with one of those also receiving a *domestic hot water* measure. The one other project completed a *refrigeration* measure.

10.4.6.2 Lighting High

The *lighting high* strata consist of lighting projects with total energy savings greater than or equal to 53.4 MWh. Five desk reviews and two site visits were conducted on these strata, resulting in three savings adjustments.

- **Participant ID 222007 adjustment for the building type and baseline lighting quantity during the desk review.** The building type was adjusted from *service (excluding food)* to

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warehouse, as the building is a self-storage facility. The quantity of baseline metal halide wall packs was adjusted from 82 to 77 to match the post-retrofit quantity. These adjustments reduced energy and demand savings.

- **Participant ID 322005 adjustment for the building type during the desk review.** The building type was adjusted for one line item from *service (excluding food)* to *exterior*, as the photo documentation showed the lights were on the exterior of the building. The building type for the other interior line items was adjusted from *service (excluding food)* to *public assembly*, as the building is a funeral home, which corresponds with public assembly. These adjustments reduced energy and demand savings.
- **Participant ID 322006 adjustment for the building type and post-installation fixture wattage during the desk review.** The building type was adjusted from *service (excluding food)* to *health care: out-patient,* as the building is a pediatric outpatient clinic. In addition, a quantity of 4 LED exit signs was adjusted from the reported 2 W to 5 W, based on its specification sheet. These adjustments reduced energy and demand savings.

10.4.6.3 Lighting Medium

The *lighting medium* strata consists of lighting projects with total energy savings greater than or equal to 23.3 MWh and less than 53.4 MWh. Seven desk reviews and two site visits were conducted on these strata, resulting in three savings adjustments.

- **Participant ID 322001 adjustments for the building type during the desk review.** The building type was adjusted from *health care: out-patient* to *education: college, university, vocational, day care, and k-12 w/ summer session*, as the building is a pediatric and adult day care center. This adjustment increased energy savings but reduced demand savings.
- **Participant 322003 adjustments for the baseline fixture type during the desk review.** A baseline quantity of eight fluorescent fixtures was adjusted from four tubes to two tubes based on the pre-retrofit photos. This adjustment reduced energy and demand savings.
- **Participant 322004 adjustments for the lighting quantity during the desk review.** A quantity of LED tubes for the interior cooler area was adjusted from 15 to 13 to better match the pre-retrofit inspection quantity and the post-retrofit photos. This adjustment reduced energy and demand savings for the project.

10.4.6.4 Lighting Low

The *lighting low* strata consist of lighting projects with total energy savings of less than 23.3 MWh. Six desk reviews and two site visits were conducted on this stratum, resulting in one savings adjustment.

Participant ID 322007 adjustments for the building type during the desk review and site visit. The building type was adjusted from *retail: strip mall* to *office*, as the majority of the square footage of the building is an office. This adjustment reduced energy and demand savings.

10.4.7 Program Documentation Review

To understand the SBS program, the EM&V team interviewed program staff and reviewed all information related to the program available on EAL's website and supplemental documentation provided by EAL and CLEAResult. The EM&V team reviewed the following documentation related to the program:

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- ArchEE data tracking system extract containing PY2024 participant information and savings;
- Quality Control and Assurance Manual Process Manual - EAL Commercial Programs, dated February 1, 2023;
- PY2024 Program Manual for the Small Business Solutions Program obtained from the EAL website;
- *overhead door weather stripping* deemed savings methodology and calculations;
- *PTAC sealing* deemed savings methodology and calculations;
- *Auto door closer* deemed savings methodology and calculations; and
- Program website.

10.4.7.1 Program Website Review

Information on the SBS program website includes a general description of the program, covering eligibility and participation. It also provides a list of eligible measures and their incentive discounts. For example, the website showcases a small office project, demonstrating estimated energy savings, incentives, and utility cost savings. The website readily provides a copy of the program manual. Finally, the website includes a search tool to find participating trade allies by name, location, and equipment type.

10.4.7.2 Program Documentation Review

The EM&V team received program-related documentation that was key to understanding the program and participation processes, including the PY2024 Program Manual and the Quality Control and Assurance Manual. Key documents to understanding the program savings methodologies and measuring level savings include the project-level files, ArchEE data, TRM 9.2, supplementary deemed savings methodologies for *overhead door weather stripping*, *auto door closers, and PTAC sealing*, and ongoing reviews with EAL and CLEAResult staff.

For most sampled projects, the details and documentation collected by EAL, the implementer, and trade allies are sufficiently extensive. As bulleted in the section above, the critical baseline and new equipment assumptions, drivers of the prescriptive measure savings, are well described in trade ally proposals and equipment inventories. Additional documentation (including invoices, photos, and work orders) collected at project approval supports the equipment quantities and performance metrics. These are industry best standards for documentation collection, which reduce the uncertainty of the project savings assumptions and development.

In most cases, the EM&V team found that documentation matched the data recorded in the ArchEE tracking system. On occasions when discrepancies occurred, they usually stemmed from typos or slight variations in the business name or address, often referring to another location or building belonging to the same customer. Equipment type, quantities, and in most cases, envelope gap widths were accurately recorded compared to the efficient technology data and project file documentation reviewed.

For lighting, most projects included a customer-signed customer proposal and participant agreement that included customer information, energy savings estimates, and trade ally information. All lighting projects included itemized invoices showing the lighting contractor, customer name and address, model numbers, and quantities of lights purchased, which helped support and confirm project details. All lighting projects included photos before and after the lighting retrofit. Photos were generally of high quality; however, there were a few instances where photos provided in the documentation were missing

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photos of lighting nameplates. A work order was provided for all lighting projects and included the list of *retrofit* measures, with pre- and post-conditions and equipment parameters identified. Work order details were generally consistent with the details in the other documentation provided. Finally, screenshots of the lighting wattage specification from DLC and ENERGY STAR were provided for all projects reviewed. Some project files included pre- and post-inspection forms with field inspector notes indicating site results.

For non-lighting projects, all projects included a customer-signed participant agreement that included customer information and standard terms and conditions. All non-lighting direct install measurements included a direct install agreement form, which documented the type of equipment installed and the quantity of units. *Commercial door air infiltration* projects included a form documenting the facility type, heating and cooling system, and the baseline gap width and weather stripping length. *Domestic hot water* projects included a form documenting the building type, water heater type, quantity of low-flow fixtures, and flow rate through each fixture. *Refrigeration* projects included an inventory of the building type, heating type, cooler type, and quantity. All non-lighting projects included photos showing relevant parameters, including gap widths in doors, water heater nameplate photos, and HVAC nameplate photos. Photos were generally of high quality; however, there were a few instances where photos provided did not show all doors that received weather stripping.

In PY2024, the EM&V team found the project documentation was as robust as last year, with very few additional data requests to the implementer needed throughout the year.

The project proposals include various details; however, the EM&V team would recommend adding other key parameters captured at the site used for savings calculations, including building type, *heating and cooling space types*.

PY2024 saw continual documentation consistency for the make and model of all lighting products. DLC and ENERGY STAR certification sheets were included for all projects, with just one sampled lighting project not providing DLC certification sheets for all installed lighting. Manufacturer's specification sheets, however, were not included for any lighting projects. Manufacturers' specification sheets are essential for LED exit signs because DLC or ENERGY STAR certification sheets are not available for these types of lights. As *lighting* measures contribute a significant portion of the program savings, documents that support key variables that are drivers of *lighting* measure savings include the post-installation lighting wattage. Having manufacturer's specification sheets would increase clarity between similar lighting types that may differ by color temperature, voltage, and other features that can impact the equipment's qualification and fixture input wattage.

10.5 OVERALL SAVINGS ESTIMATES

The ArchEE tracking system was the primary tool for checking claimed savings and evaluating savings calculations across a participant census. The tracking system contained the key assumptions and parameters necessary for calculating measure savings. After performing evaluation savings calculations across all measures claimed by the SBS program, the EM&V team found discrepancies in some measure categories. Those discrepancies that had the most considerable impact on program savings were discrepancies found during the tracking system data review and project-level engineering reviews for *lighting* measures, as detailed above.

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The EM&V team calculated savings across the program measures based on the tracking data review and desk review results. For SBS, the evaluated energy and demand savings were lower than reported savings for energy (98.4 percent kWh realization rate) and demand (94.9 percent kW realization rate). The evaluated savings are based on the savings calculations and adjustments made across the tracking system and supplemented by the results of the 25 sampled accounts, as discussed above. *Tune-up* measure savings are based on the results of the tracking system review.

The main drivers of the realization rates were adjustments to lighting projects during the desk review and on-site review process. The most significant adjustment was for a lighting project that used the incorrect building type and assigned an exterior light as interior. The other sources of lighting adjustments included quantity, retrofit lighting wattage, and baseline lighting fixture type.

Table 172 shows that *lighting* measures had the most considerable variances and contributed the largest portion of program savings. These findings resulted in the most significant impacts on changes in kWh and kW for the program.

Table 172. Small Business Solutions—Final Evaluated Energy Savings and Realization Rates by Measure Strata

Strata	Ex-ante savings		Ex-post savings		Realization rate		Data source
	kW	kWh	kW	kWh	kW	kWh	
Lighting – high	235.8	1,304,304	198.1	1,241,594	84.0%	95.2%	Desk reviews and site visits
Lighting - medium	327.0	1,743,539	314.8	1,739,448	96.3%	99.8%	Desk reviews and site visits
Lighting – low	382.6	1,902,519	354.3	1,852,870	92.6%	97.4%	Desk reviews and site visits
Custom	21.2	126,872	21.2	126,872	100.0%	100.0%	No activity[101]
Other	70.1	1,340,074	70.1	1,340,074	100.0%	100.0%	Desk reviews and site visits
Tune-ups	508.9	2,480,066	508.9	2,456,055	100.0%	99.0%	Tracking system review
Total	**1,545.6**	**8,897,374**	**1,467.5**	**8,756,913**	**94.9%**	**98.4%**	

10.6 QUALITY CONTROL/QUALITY ASSURANCE PROCESSES

EAL worked with the implementer CLEAResult to develop a quality management process for all EAL commercial programs. This process can be used for projects with or without a trade ally. No changes were made to this procedure in PY2024.

For trade-ally projects, CLEAResult emphasizes trade ally training to remind trade allies of program processes, technical requirements for measures, application requirements, and awareness of the QC process. QC protocols include clear pass/fail thresholds for addressing trade ally performance. During the post-inspection of any project (trade-ally-driven or not), the fail condition results if the work scope is significantly incomplete, the efficient measures are found to be ineligible, or there are safety or code issues with the installation. A failed project causes the trade ally to be removed from the reduced inspection rate list that the program maintains and is put under probationary status. Once a trade ally is removed, that contractor must complete five consecutive projects without "failures" to be returned to the

[101] No custom projects closed prior to the tracking system review or the desk reviews; therefore, the stratum received a 100 percent realization rate for this evaluation.

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reduced inspection rate list. For a trade ally to qualify for the reduced inspection rate, they must complete five consecutive projects without a failure as determined by the program implementer.

Customers must sign a customer agreement to be eligible for the program; as part of this agreement, the customer is willing to allow a field inspector to perform a QC inspection. These inspections could happen to any project regardless of scope. An inspection form was developed to perform standardized and consistent inspections to ensure the equipment on-site is being appropriately documented.

Below are the steps that are followed during the QA/QC process, as outlined in the Quality Control and Assurance Process Manual:

- enrollment and customer verification,
- project documentation and completeness review,
- pre-engineering QC and approval,
- pre-installation inspection,
- pre-installation inspection corrections—trade-ally-driven projects,
- post-installation QC,
- post-installation inspection,
- post-installation inspection corrections—trade-ally-driven projects,
- post-engineering approval, and
- post-project review and closeout.

For all projects, the QA/QC process begins with verification that customers are eligible for participation in the program. Next, project documentation (including contact information, signed proposal, W9 forms, and pre-installation photos) is verified to be complete. Following the documentation check, the engineering team at CLEAResult checks to ensure that the project installs eligible equipment, and that savings parameters and calculations are accurate. For QA, the program staff also conducts reviews of each incentive application. After the engineering QC check, proposals that do not pass all review aspects are rejected and sent back for completion.

The next stage in the QA/QC process occurs during the pre-installation inspection stage, where pre-installation inspections are conducted to confirm pre-installation conditions. These inspections are completed for 100 percent of custom projects and the largest (approximately 10 percent) trade-ally projects identified by kilowatt-hour savings. For the SBS program, larger projects are defined as those with savings estimated at over 60,000 kWh. Inspections are also completed for all *prescriptive* projects submitted by a non-trade ally or submitted by a trade ally under probation. A minimum of ten percent of all other projects under 60,000 kWh are also inspected. Trade allies not under probationary status must have at least ten percent of their total project quantities pre- or post-inspected. Any findings during the pre-inspection stage are returned to the trade ally to make corrections before the project may proceed.

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11.0 PUBLIC INSTITUTIONS SOLUTIONS OFFERING

The Public Institutions Solutions Offering (PISO) program offers commercial customers cash and non-cash incentives for energy efficiency improvements. The program targets governments, government-owned institutions, and public-private education entities. Through technical assistance in energy performance benchmarking; energy master planning; and identifying, assessing, and implementing energy efficiency technologies, the program educates and assists customers in integrating energy efficiency into their short- and long-term planning, budgeting, and operational practices.

Program participants are consulted about the available offerings and financial incentives for eligible efficiency measures installed in their facilities using a network of trade allies. Trade allies are responsible for analyzing customers' energy use, identifying energy efficiency improvement projects, and installing the recommended measures. The program offers direct-install, prescriptive, and custom measures, which require measurement and verification (M&V). The incentive levels vary by the number of installed measures.

The program benchmarks customers' energy use through hands-on expertise and consulting and identifies a roadmap to success. Customers are given guidance throughout their experience in the program. The PISO program is designed to minimize the following market barriers to energy efficiency implementation for Entergy Arkansas, LLC's (EAL) PISO customers:

- budget constraints,
- lack of understanding of project financials, and
- lack of awareness of energy-efficient technologies.

The program is implemented by EAL and CLEAResult, who provide recruitment, marketing, outreach, and training to trade allies. On behalf of EAL, CLEAResult performs energy assessments, directly installs measures (e.g., *light-emitting diodes* (*LED*), *low-flow faucet aerators*, *pre-rinse spray valves*, *weather stripping*), conducts pre- and post-implementation inspections, maintains the program quality assurance/quality control (QA/QC) standards, and administers the incentive process—including program tracking—directly with participating trade allies.

In support of the impact evaluation, the evaluation, measurement, and verification (EM&V) team conducted a tracking system review for all measures, a separate database review for *tune-up* measures, desk reviews on a randomly selected sample of 30 projects, 15 site visits, and a review of program documentation.

Table 173. Public Institutions Solutions Offering—Data Collection and Evaluation Activities

Net-to-gross (NTG) approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site M&V	Metered data analysis[102]
PY2022 primary data collection	Program staff interviews (2) Materials review	Census	30	15	9

[102] This column refers to EAL customer meter data provided to the EM&V team as opposed to primary metered data collected as part of the on-site M&V.

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11.1 KEY FINDINGS

Based on the PY2024 program tracking data, the PISO program incentivized energy efficiency measures to 178 unique participants[103] through 17 trade allies. Table 174 provides the program's claimed savings by measure category, where the most considerable amount of claimed participants (46 percent) and savings (51 percent) were attributable to *tune-ups* measures. Another considerable measure in terms of participation were *lighting and lighting-new construction* measures, with 28 percent of participants and 22.1 percent of energy savings.

Table 174. Public Institutions Solutions Offering—Reported Participation and Savings[104]

Measure category	Trade allies	Participants[105]	Projects[105]	Program savings (kWh)	Percentage of program savings (kWh)
Custom—CEI[106]	1	39	49	3,524,085	22.1%
Custom—HVAC	2	2	2	199,020	1.2%
Custom—other	0	2	2	93,666	0.6%
Envelope[106]	0	1	1	19,243	0.1%
HVAC	4	7	7	374,311	2.3%
Lighting	5	44	47	3,155,239	19.8%
Lighting-new construction	4	6	6	435,706	2.7%
Refrigeration	1	7	10	43,008	0.3%
Tune-ups	7	82	1,890	8,118,169	50.9%
Total	**17**	**178**	**2,007**	**15,962,447**	**100.0%**

In PY2024, the PISO program reported 15,962 MWh in gross energy savings and 2.5 MW in gross demand savings. Table 175 below shows the reported and evaluated savings across the program. The program achieved remarkable results, reaching 108 percent of its energy savings goals, but fell short of its planned demand savings goals, achieving 84 percent of the annual target.

Table 175. Public Institutions Solutions Offering—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio*	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	15,962	15,889	99.5%	98.8%	15,695	6.2%
Demand savings (MW)	2.5	2.5	98.7%	99.0%	2.4	3.0%

* NTG ratios displayed in the table are weighted based on the evaluated net savings results. The NTG ratios used at the measure level are 0.98 for the *tune-up* and *commercial Wi-Fi thermostats* and 1.0 for everything else.

[103] A unique participant is based on a single utility account number.
[104] ArchEE extract dated January 31, 2025.
[105] A participant may install measures across multiple measure categories or multiple projects. Thus, the total count of participants and projects may not equal the sum of individual rows by measure category.
[106] The implementer directly installed or implemented all measures.

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Table 176. Public Institutions Solutions Offering—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	14,515	15,695	108%
Demand savings (MW)	2.90	2.44	84%

The PISO program's evaluated energy and demand savings were slightly lower than the reported (99.5 percent kilowatt-hour and 98.7 percent kilowatt realization rates). The evaluated savings are based on savings calculations and adjustments made across the results of the 30 sampled accounts for desk reviews and site visits. *Tune-up* measure savings were based on a comprehensive tracking system review.

In previous years, key updates to the program's tracking database improved the data's clarity and accuracy. The changes included correcting duplicate trade ally names and IDs in the tracking system and including the Design Lights Consortium (DLC) or ENERGY STAR® product IDs for all products sold through the program. The recommendations presented below for PY2024 focus on further improving data accuracy and consistency.

NTG research was conducted in PY2022 for PISO program and *tune-up* measures. The evaluation researched NTG ratio is 100 percent for the non-*tune-up* portion of the program. Segmented by whether the measures were tune-ups, the *tune-up* measures NTG ratio is 97.6 percent for kilowatt-hours and kilowatts while the non-*tune up* NTG ratio is 100.0 percent.

11.2 RECOMMENDATIONS

The EM&V team has identified three key findings and recommendations for consideration by EAL (Table 177), which primarily focuses on improving the realization rate in the following program year and increasing the transparency, accuracy, and evaluability of program savings in the future for the PISO program.

Table 177. Public Institutions Solutions Offering—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Enhance QA/QC procedures	To improve data accuracy in HVAC and lighting projects, it is recommended to strengthen QA/QC measures by: • Verifying HVAC unit efficiencies against AHRI certificates. • Ensuring lighting wattages align with DLC/ES certificates. • Accurately reporting installed lights, distinguishing between ENERGY STAR-certified and non-certified options. • Confirm that reported baseline and installed lighting quantities match inspection documentation. These enhancements will help catch errors and mistakes in the future.

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Type	Recommendation	Key finding
	Recommendation 2: Review savings algorithms for *Wi-Fi thermostat* measures to ensure consistency	The EM&V team identified three projects where the reported fuel type was *air conditioning with electric resistance heat*, but savings were calculated using deemed savings values associated with a heat pump unit. In addition, in five projects where the reported fuel type was a heat pump, savings were calculated using deemed savings values associated with an *air conditioning* unit. The EM&V team recommends reviewing the deemed savings values and calculation algorithms for *Wi-Fi thermostat* measures to ensure consistency based on the tracked fuel type.
	Recommendation 3: Review savings algorithms for *commercial AC post-test out* measures to ensure reported savings are being calculated properly.	The EM&V team identified 55 projects in which the claimed savings subtracted the pre-clean savings estimates from the previous year. An additional 17 projects had a savings gap due to a manual data integration error. The EM&V team recommends strengthening the QA/QC of the reported savings for the *commercial AC post-test-out* measure to ensure proper reporting of trued-up savings.

Table 178. Public Institutions Solutions Offering—Status of Prior Year Recommendations

Status of prior year recommendations	
BY2023 impact recommendations	• Continue discussions with the EM&V team and Independent Evaluation Monitor (IEM) on the sources of, and uses for, weather data in *continuous energy improvement* (*CEI*) and *custom* projects. ○ In progress. • Increase the review of the statistical results on regression coefficients for projects. ○ Continuing. • Increase quality assurance/quality control (QA/QC) on certified/non-certified lights for *lighting retrofit* projects. ○ Continuing.
BY2023 process recommendations	• Discuss potential opportunities to focus additional outreach efforts and program offerings to non-profit organizations serving hard-to-reach segments in EAL's territory. ○ Continuing.

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11.3 METHODOLOGY

This section summarizes the methodologies used for the evaluation of the PISO program.

11.3.1 Impact Evaluation

The evaluated savings results are based on calculations and adjustments made during the tracking system review, *tune-up* measure review, 30 engineering desk reviews, and 15 site visits. Savings adjustments were made at the project level. Final evaluated savings for the *tune-up* measures are based on adjustments made during the tracking system review. All other measures' evaluated savings results are based on desk review and site-visit level adjustments by sampled strata. The tracking system informed qualitative findings and served as a guide for potential issues for investigation during desk reviews.

To perform the PY2024 impact evaluation, the EM&V team completed the following activities:

- staff interviews and ongoing discussions;
- program website review of eligible measures, incentives, and participating trade allies;
- program manual and supplemental documentation review;
- program tracking system/database reviews;
- review of the tracking system and M&V database for *tune-ups* and *commercial Wi-Fi thermostats*;
- engineering desk review of 30 sampled accounts, representing 30 individual projects; and
- on-site M&V of 15 sampled accounts that also received desk reviews.

Table 179 shows the sample design and achieved sample sizes for the different data collection types employed for the impact evaluation effort.

Table 179. Public Institutions Solutions Offering—Data Collection Efforts and Project Types

Data collection activity	Design sample	Achieved sample	Custom projects	Prescriptive projects
Staff interviews	2	2	N/A	N/A
Tracking system data review[107]	Q1–Q2 census	Q1–Q2 census	N/A	45
Engineering desk review[108]	30	30	13	23
On-site M&V visit[109]	15	15	3	14
Tune-up measure data review	Census	Census	N/A	N/A

[107] ArchEE extract dated July 10, 2024. The count of *prescriptive* projects is the quantity of unique *JobId* numbers for the measure categories included in the Q1–Q2 tracking database review.
[108] Six participants had both *prescriptive* and *custom* measures incentivized under the same *JobId*.
[109] On-site visits were recruited from the list of participants that received desk reviews, nesting the on-site sample within the desk review sample. Two participants had *prescriptive* and *custom* measures incentivized under the same *JobId*.

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Most of the measures incentivized by the PISO program in PY2024 are currently included in the TRM 9.2, Volume 2. Specific sections of TRM 9.2 associated with the savings developed for the PISO program measures are provided in Table 180. These prescriptive algorithms and assumptions were the basis of the savings methodology used by the implementer and the EM&V team for energy and demand savings analysis.

Table 180. Public Institutions Solutions Offering—TRM 9.2 Prescriptive Algorithms Utilized

Measure category	TRM 9.2 section	TRM 9.1 measure name
HVAC	3.1.16	Unitary and split-system AC/HP equipment
	3.1.17	Air- or water-cooled chilling equipment (chillers)
Envelope	3.2.10	Commercial door air infiltration
Refrigeration	3.5.6	Strip curtains for walk-in coolers and freezers
	3.5.7	Door gaskets for walk-in and reach-in coolers and freezers
Lighting	3.6.2	Lighting controls
	3.6.3	Lighting efficiency

Air conditioner, chiller, and heat pump tune-ups, and *overhead door weather stripping* measures were also incentivized through the PISO program. *Overhead door weather stripping* measures do not strictly adhere to TRM 9.2 but instead follow prescriptive approaches developed by CLEAResult based on the TRM algorithms for *commercial door air infiltration*. Additional project details outside ArchEE were required to evaluate the *tune-up* measures following a partial M&V approach. A separate tracking system review was conducted for all *tune-up* measures across the three commercial programs.

Table 181. Public Institutions Solutions Offering—Non-TRM Prescriptive Algorithms Utilized

Measure category	Measure description
Tune-ups (formerly CoolSaver)	Commercial AC post-test out
	Commercial AC pre-clean
	Commercial central air conditioner (tune-up)
	Commercial heat pump (tune-up)
	Commercial HP post-test out
	Commercial HP pre clean
	Commercial Wi-Fi thermostat
Envelope	Overhead door weather stripping
Custom	Custom - heating and cooling
	Custom controls
	Custom - non-heating and cooling
	Variable frequency drives

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11.3.1.1 Tracking System Review

The EM&V team reviewed all tracking data to assess the extent to which it provided the key input parameters needed for TRM 9.2-based algorithms. The tracking system data review began using TRM 9.2 as a reference in our review of measure-level savings assumptions. Sections of TRM 9.2 utilized for the tracking system review are described above in Table 182.

The EM&V team reviewed the tracking systems linkage to the TRM 9.2 deemed savings algorithms used to estimate savings. This review was completed across a census of the program measures at the end of Q2.[110] The utility's tracking database stores all the critical input variables and assumptions necessary for savings calculations. This review is conducted mid-year to help facilitate changes in the algorithm applications before the end of the year, where they might cause discrepancies in reported versus verified savings. After the measure-level review, the EM&V team verified energy savings calculations for engineering fundamentals, appropriateness, and accuracy.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system are consistent with the savings outlined in TRM 9.2 used to estimate project savings. Third, it assessed the tracking system's ability to support future evaluation needs.

Table 182. Public Institutions Solutions Offering—PY2024 Mid-Year Tracking System Reported Energy Savings by Measure Category

Measure	Reported savings	
	kW	kWh
Envelope	1.4	19,243
HVAC	11.5	143,326
Lighting	242.6	1,312,106
Lighting-new construction	64.1	279,359
Total evaluated	**319.5**	**1,754,034**
Tune-up and Wi-Fi thermostat[111]	137.9	637,781
Custom	196.6	1,265,290
Total	**654.0**	**3,657,105**

11.3.1.2 Tune-Up and Wi-Fi Thermostat Measurement and Verification Review

The EM&V team reviewed all the *tune-up* and *commercial Wi-Fi thermostat* measures with a comprehensive tracking system review, supplemented with engineering reviews of the M&V and deemed savings methodologies. These measures are tracked in ArchEE but have supplemental data in external databases necessary for evaluation. The tracking system reviews focused on replicating individual measure savings results and determining population variances.

[110] Tracking data downloaded July 10, 2024.
[111] *Tune-up* and *Wi-Fi thermostat* measures are evaluated through a separate tracking system and M&V data reviews at the close of the program year.

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11.3.1.3 Desk Reviews and Site Visits

The optimal count of sample units for the *custom*, *lighting*, and *other* strata was determined based on PY2021 through BY2023 savings representations for each stratum. These savings were compared against the savings in ArchEE quarterly to determine whether there was an under- or over-representation of specific measure categories occurring compared to past years. Also, uncertainty in savings drove sampling considerations for the *lighting* stratum and *other* strata.

The sampling plan for lighting accounted for the differences between fully deemed lighting projects and those using custom hours of use. For the whole population, *lighting* projects were considered deemed if all measures for a project were using the deemed value for annual operating hours (AOH) that is consistent with the building type as defined in ArchEE. For projects with any measure that uses annual hours of use that are not consistent with the building type, the entire project is considered *non-deemed*. For *lighting*, this is the classification process:

1. Projects were divided into *deemed* and *non-deemed* based on whether all measures used AOHs that matched their building type in the tracking system (deemed) or any measure deviated from that value (non-deemed).

2. The contribution of energy savings for both strata is examined. The base strategy is to oversample the non-deemed projects so that at 50 percent energy savings, twice as many non-deemed projects will be chosen. The amounts are then adjusted up or down for each program based on the actual percentage of energy savings for non-deemed compared to the whole population.

In addition to the sub-strata for lighting projects, three sub-strata for *custom* projects were defined. The first sub-stratum is for *CEI* projects. The other two sub-strata divide projects by whether they went through the Early Engagement for High Profile Projects Protocol (e*arly review*) or did not (*other*). The contribution of savings was used to determine the number of sample points for each sub-strata, with a higher weighting for *other*, a standard weighting for *CEI*, and a lower weighting for e*arly review*. For PIS, there were no e*arly review* projects in PY2024.

The site visits were nested selections of the desk reviews, meaning that all projects receiving a site visit assessment also received a desk review. Projects with variances that could be cleared up during the site visit were prioritized first, with the remaining site visits randomly selected from within the desk review sample. Table 183 summarizes the result of the sampling for the PISO program.

Table 183. Public Institutions Solutions Offering—Summary of Sampled Savings

Sampling strata	Projects	Projects sampled[112]	Reported kWh	Reported kW
Custom				
CEI	49	9	2,288,566	285.2
Other	4	4	292,686	97.1
Custom subtotal	**53**	**13**	**2,581,253**	**382.2**

[112] Six sampled projects had measures in multiple categories.

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Sampling strata	Projects	Projects sampled[112]	Reported kWh	Reported kW
Lighting				
Deemed	52	15	1,219,250	245.0
Non-deemed	1	1	270,088	30.2
Lighting subtotal	**53**	**16**	**1,489,338**	**275.1**
Other subtotal	**18**	**7**	**210,847**	**24.2**
Total	**117**	**30**	**4,281,437**	**681.6**

11.4 DETAILED IMPACT EVALUATION RESULTS

The PISO program's evaluated energy and demand savings were slightly lower than the reported (99.5 percent kilowatt-hour realization rate and 98.7 percent kilowatt realization rate). During the desk review and site visit process, the EM&V team corrected lighting installed fixture types and quantities. Another finding that significantly impacted savings on many measures was adjustments to *electric resistance heat* projects in the *Wi-Fi thermostat* measures.

Corrections to *tune-up* and *Wi-Fi thermostat* projects that contributed to reduced energy (kWh) savings were found to be primarily due to:

- Wi-Fi thermostat and central air conditioning tune-up measures used incorrect unit types (e.g., heat pump energy savings instead of air conditioning energy savings) in savings algorithms.

Corrections to *lighting* projects that contributed to reduced demand and energy savings were primarily due to:

- adjustments to the installed lighting fixtures' quantity,
- adjustments to the installed lighting fixtures' wattages to match DLC/ES certificates,
- adjustments to the building's linear footage,
- fixtures installed that were DLC or ENERGY STAR certified but not claimed; and
- adjustments to the baseline lighting fixtures quantity.

Corrections to *custom* projects that contributed to additional energy savings and reduced demand savings were primarily due to:

- adjustment to the coincidence factor for one project to match the TRM 9.2 numbers for the building type,
- adjusting the motor efficiencies for the supply and exhaust fan motors to match those in the TRM 9.2 and the Work Paper; and
- adjustments to the part-load efficiency for the HVAC units to match the AHRI certificates for the *Electronically Commutated Motors for Exhaust fans* measure.

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Corrections to *other* projects that contributed to reduced demand and energy savings were primarily due to:

- adjustments to the cooling capacities, full load, and part-load efficiency for the HVAC units to match the AHRI certificates and Arkansas TRM 9.2.

Several different measures are provided to participants through the program. Within the tracking system, qualifying products are assigned to unique measure names. The mapping of these measure names to measure categories is provided below.

Table 184. Public Institutions Solutions Offering—Mapping to Measure Category

Measure description	Measure category
Continuous energy improvement	Continuous energy improvement
Core CEI participation payments	Continuous energy improvement
Custom - heating and cooling	Custom HVAC
Custom controls	Custom HVAC
Custom - non-heating and cooling	Custom other
Variable frequency drives	Custom other
Overhead door weather stripping	Envelope
Unitary AC equipment - unitary AC < 65000 BTU/hr - replace on burnout	HVAC
Unitary AC equipment - unitary AC => 65000 BTU/hr - replace on burnout	HVAC
Unitary HP equipment - heat pump < 65000 BTU/hr - replace on burnout	HVAC
Unitary HP equipment - heat pump => 65000 BTU/hr - replace on burnout	HVAC
Water chilling equipment (water cooled centrifugal) - replace on burnout	HVAC
Halogens	Lighting
HIDs	Lighting
Integrated-ballast compact fluorescent lamps (CFL)	Lighting
Integrated-ballast LED lamps	Lighting
LEDs	Lighting
Lighting controls	Lighting
Magnetic ballast T5 or premium T8 retrofit of T12	Lighting
Modular CFLs and CCFLs	Lighting
Other linear fluorescent	Lighting
Outdoor-halogens	Lighting
Outdoor-integrated-ballast compact fluorescent lamps (CFL)	Lighting
Outdoor integrated-ballast LED lamps	Lighting
Outdoor-LEDs	Lighting
NC-interior project savings	Lighting-new construction
NC-LEDs	Lighting-new construction
NC-lighting controls	Lighting-new construction

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Measure description	Measure category
Outdoor-NC-LEDs	Lighting-new construction
Outdoor-NC-lighting project savings	Lighting-new construction
Refrigeration door gaskets	Refrigeration
Refrigeration strip curtains	Refrigeration
Commercial AC post-test out	Tune-up
Commercial AC pre-clean	Tune-up
Commercial central air conditioner (tune-Up)	Tune-up
Commercial heat pump (tune-Up)	Tune-up
Commercial HP post-test out	Tune-up
Commercial HP pre-clean	Tune-up
Commercial Wi-Fi thermostat	Tune-up

Table 185 below outlines the claimed number of program participants and the percentage of savings by measure category in PY2024. *Tune-up* was the dominant measure category in PY2024, accounting for 51 percent of claimed demand (kilowatt) savings and 51 percent of claimed energy use (kilowatt-hours) savings.

Table 185. Public Institutions Solutions Offering—PY2024 Reported Participation and Savings by Measure Category

Measure category	Participants[113]	Projects[11]	Program savings		Percentage of program savings	
			kW	kWh	kW	kWh
Custom—CEI	39	49	383.4	3,524,085	15%	22%
Custom—HVAC	2	2	93.7	199,020	4%	1%
Custom—other	2	2	3.3	93,666	<1%	1%
Envelope	1	1	1.4	19,243	<1%	<1%
HVAC	7	7	31.9	374,311	1%	2%
Lighting	44	47	601.8	3,155,239	24%	20%
Lighting-new construction	6	6	99.5	435,706	4%	3%
Refrigeration	7	10	4.9	43,008	<1%	<1%
Tune-up	82	1,890	1,278.6	8,118,169	51%	51%
Total	**178**	**2,007**	**2,498.6**	**15,962,447**	**100%**	**100%**

[113] A participant is a unique account described by the ArchEE data field *Account Number*. A project is a unique job number defined by the ArchEE data field *JobId*. A participant may install measures across multiple measure categories and multiple projects. As a result, the total count of participants and projects may not equal the sum of the counts by measure category.

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Table 186 outlines the savings and percentage of savings by measure in PY2024. *Commercial Wi-Fi thermostats* were the dominant measure in PY2024, accounting for 31 percent of claimed gross kilowatt savings and 45 percent of claimed gross kilowatt-hour savings. *CEI* was the second most dominant measure in PY2024, accounting for 15 percent of claimed gross kilowatt savings and 22 percent of claimed gross kilowatt-hour savings. *LEDs* were the third most dominant measure, with 17 percent of the kilowatt-hour savings and 21 percent of the program kilowatt savings.

Table 186. Public Institutions Solutions Offering—PY2024 Reported Participation and Savings by Measure

Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Custom—CEI				
Continuous energy improvement	377.9	3,507,312	15%	22%
Core CEI participation payments	5.5	16,773	<1%	<1%
Custom—HVAC				
Custom - heating and cooling	90.6	179,958	4%	1%
Custom controls	3.1	19,063	<1%	<1%
Custom—other				
Custom - non-heating and cooling	-	69,716	0%	<1%
Variable frequency drives	3.3	23,950	<1%	<1%
Envelope				
Overhead door weather stripping	1.4	19,243	<1%	<1%
HVAC				
Unitary AC equipment - unitary AC < 65000 BTU/hr - replace on burnout	5.3	8,823	<1%	<1%
Unitary AC equipment - unitary AC => 65000 BTU/hr - replace on burnout	9.2	86,019	<1%	1%
Unitary HP equipment - heat pump < 65000 BTU/hr - replace on burnout	<1	4,592	<1%	<1%
Unitary HP equipment - heat pump => 65000 BTU/hr - replace on burnout	11.6	93,046	<1%	1%
Water chilling equipment (water-cooled centrifugal) - replace on burnout	5.7	181,831	<1%	1%

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Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Lighting[114]				
Halogens	0.7	3,587	<1%	<1%
HIDs	-	-	0%	0%
Integrated ballast compact fluorescent lamps (CFL)	<1	140	<1%	<1%
Integrated-ballast LED lamps	2.7	14,624	<1%	<1%
LEDs	521.0	2,721,617	21%	17%
Lighting controls	69.0	199,622	3%	1%
Magnetic ballast T5 or premium T8 retrofit of T12	-	-	0%	0%
Modular CFLs and CCFLs	<1	515	<1%	<1%
Other linear fluorescents	8.2	39,365	<1%	<1%
Outdoor-halogens	-	-	0%	0%
Outdoor-integrated-ballast compact fluorescent lamps (CFL)	-	-	0%	0%
Outdoor-integrated-ballast LED lamps	-	4,931	0%	<1%
Outdoor-LEDs	-	170,839	0%	1%
Lighting-new construction[115]				
NC-interior project savings	60.8	304,447	2%	2%
NC-LEDs	-	-	0%	0%
NC-lighting controls	38.8	115,638	2%	1%
Outdoor-NC-LEDs	-	-	0%	0%
Outdoor-NC-lighting project savings	-	15,621	0%	<1%
Refrigeration				
Refrigeration door gaskets	0.8	6,688	<1%	<1%
Refrigeration strip curtains	4.1	36,320	<1%	<1%

[114] Some measures were identified in the tracking system data with no savings; these represent lighting included in site lighting inventories but not incented by the program.

[115] For *lighting-new construction* savings are noted on the “project savings” measures while the lighting inventory is tracked under *NC-LEDs* and *Outdoor-NC-LEDs.*

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Measure	Program savings		Percentage of program savings	
	kW	kWh	kW	kWh
Tune-ups				
Commercial AC post-test out	84.2	144,373	3%	1%
Commercial AC pre-clean	27.5	46,310	1%	<1%
Commercial central air conditioner (tune-up)	357.1	635,650	14%	4%
Commercial heat pump (tune-up)	21.3	77,328	1%	<1%
Commercial HP post-test out	10.9	51,630	<1%	<1%
Commercial HP pre-clean	<1	782	<1%	<1%
Commercial Wi-Fi thermostat	777.4	7,162,096	31%	45%
Total	**2,498.6**	**15,962,447**	**100%**	**100%**

Table 187 shows the incentive structure for PY2024 compared to the previous program year. The incentives for all tiers of measures stayed the same.

Table 187. Public Institutions Solutions Offering—PY2024 Incentives

Measure	BY2023 incentive*	PY2024 incentive*
Directly Installed by CLEAResult		
Domestic hot water		
Commercial showerheads	Full cost	Full cost
Faucet aerators	Full cost	Full cost
Pre-rinse spray valves	Full cost	Full cost
Envelope		
Commercial door air infiltration (i.e., weather stripping)	Full cost	Full cost
Lighting		
Integrated-ballast LED lamps	Full cost	Full cost
Outdoor—integrated-ballast LED lamps	Full cost	Full cost
Installed by trade ally		
PC power management	$0.10/kWh	$0.10/kWh
Gaskets and strip curtains	100 percent, contact program staff	100 percent, contact program staff

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Measure			BY2023 incentive*	PY2024 incentive*
All other measures**	1 measure	2 measures	3 measures	4+ measures
BY2023 incentive*	$0.12/kWh	$0.13/kWh	$0.14/kWh	$0.15/kWh
PY2024 incentive*	$0.12/kWh	$0.13/kWh	$0.14/kWh	$0.15/kWh

* Source: PY2022 Program Manual.

** To qualify for an additional tier, an energy efficiency measure must exceed 25,000 kWh of savings. Measures can be grouped to meet the 25,000 kWh minimum threshold, but only one such grouping is allowed per customer. *Direct-install* measures only count as one measure tier.

11.4.1 Program Documentation and Tracking Data Review

To understand the PISO program, the EM&V team interviewed program staff and reviewed all information available on EAL's website related to the program and supplemental documentation provided by EAL and CLEAResult. The EM&V team received the following documentation related to the program:

- ArchEE data tracking system extract containing PY2024 participant information and savings;
- Supplemental project-level documentation received during quarterly data requests for sampled accounts, which typically included:
    - Signed customer proposals and project agreements—sometimes files included initial and final proposals if projects had changed during development;
    - Customer proposals that typically included a detailed inventory of site-captured measure-level details such as:
        - *Domestic hot water* measures (e.g., *low-flow faucet aerators*, *commercial showerheads*, and *low-flow showerheads*) were all directly installed by the implementer. A Direct Install Report typically inventoried the device and quantity installed by room. Additional notes typically included a flow rate as the new equipment may have multiple flow rates (e.g., 0.5 gallons per minute (GPM), 1.0 GPM). Also, photo documentation of the water heater and its nameplate was provided. Details of the exact installed equipment flow rates were not included, and a specification of the new equipment was not provided.
        - The implementer directly installed *commercial door air infiltration* measures (e.g., *weather stripping, door sealing*). A Direct Install Report typically inventoried the device, quantity (by gap size), and new weather stripping length installed by room. Additional notes typically included the gap size as the new equipment may have multiple widths (e.g., one-eighth inch, one-quarter inch) and the type (e.g., *weather stripping*, *door sweep*). Also, photo documentation of a sample of doors with the existing condition and gap noted by a view of a tape measure was provided. A clear description or documentation of the *HVAC type* was not included.

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        - The implementer directly installed *refrigeration* measures (e.g., *door gaskets, strip curtains*). A Direct Install Report typically inventoried the cases type, quantities, and dimensions of the new strip curtains installed by room. Additional notes usually included the qualifying damage type (e.g., *partial tear, rotted/dry, missing*). Photo documentation of a sample of doors in their existing condition was also provided.
        - *HVAC* measures included new equipment type, make and model numbers, capacity, and quantity. Manufacturer's specification sheets and Air Conditioning, Heating, and Refrigeration Institute (AHRI) certificates were also provided.
        - *Lighting* and *lighting controls* measures included existing and new fixture types, make and model numbers, wattages, quantity, and control type. Also, DLC and ENERGY STAR® certification sheets were typically provided for all models. Manufacturer specification sheets were generally not provided.
    - invoices;
    - pre- or post-inspection forms indicating field inspectors' notes and results; and
    - photographic documentation pre- or post-installation.
- a Quality Control and Assurance Manual for EAL commercial programs, dated February 1, 2023; and
- PY2022 Program Manual for the Public Institutions Solutions Offering program obtained from the EAL website; which was verified to be in use for PY2024.

11.4.2 Detailed Tracking System/Database Review

The EM&V team reviewed all program-claimed tracking data to assess the extent to which it provided the key input parameters needed for TRM 9.2-based algorithms and the final claimed values necessary for each measure. The tracking system data review began using TRM 9.2 as a reference in our review of measure-level savings assumptions. Chapters of TRM 9.2 utilized for the tracking system review are described above in Section 11.3.1.

The EM&V team reviewed the tracking systems linkage to the TRM 9.2 deemed savings algorithms used to estimate savings; this review was completed across a census of the program measures. The utility's tracking database stores all the critical input variables and assumptions necessary for savings calculations. The EM&V team verified energy savings calculations for engineering fundamentals, appropriateness, and accuracy after the measure-level review.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified whether the savings estimates in the tracking system are consistent with the savings outlined in TRM 9.2 used to estimate project savings. Third, it assessed the tracking system's ability to support future evaluation needs.

The ArchEE tracking system, which supplied all participant- and measure-level data, was the primary tool for checking claimed savings and performing evaluation savings calculations. These results were informed and supplemented by the findings from the engineering desk reviews and site visits, as further outlined in the savings calculation results section.

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The overall PISO-evaluated tracking system savings resulted in savings that matched or exceed the reported savings (103 percent kilowatt and 100 percent kilowatt-hour realization rates) calculated by the program implementer. The evaluated savings were based on the results of adjustments made from completing engineering reviews of the program's tracking data. The overall realization rates were affected most by variances between the reported and evaluated energy and demand savings (kilowatt-hour and kilowatt) for HVAC projects. Further details of measure-based findings are provided below.

Overall, the tracking system review found the following:

- Except for the *custom, CEI, overhead door weather stripping,* and *tune-up* measures in the PISO program, all measures utilize TRM 9.2, Volume 2 deemed algorithms. The savings equations were confirmed consistent with TRM 9.2. As described above, the *overhead door weather stripping* and *tune-up* measures follow custom approaches developed from assumptions and methodologies in the TRM. The EM&V team confirmed the *overhead door weather stripping* measures following the M&V plan through this tracking system review. A tracking system review of the *tune-up* measures was completed to inform *tune-up* evaluated savings separately from the mid-year tracking system review.
- The PISO program measures utilize TRM 9.2, Volume 2 deemed savings assumptions, with two notable exceptions. The *overhead door weather stripping* measure uses extrapolated savings values based on the *commercial door air infiltration* measure in TRM 9.2. Also, some *lighting efficiency* measures use site-specific AOH instead of the deemed values in TRM 9.2 for *lighting* projects.
- The overall tracking review realization rates were 103.0 percent kilowatts and 100.0 percent kilowatt-hours, not including the *tune-up* measures. Tracking review realization rates for most measures were at 100 percent.

Table 188. Public Institutions Solutions Offering—PY2024 Mid-Year Tracking System Energy Savings and Realization Rates by Measure Category

Measure category	Claimed savings		Evaluated savings		Realization rate	
	kW	kWh	kW	kWh	kW	kWh
Envelope	1.4	19,243	1.4	19,243	100%	100%
HVAC	11.5	143,326	21.6	143,326	188%	100%
Lighting	242.6	1,312,106	242.6	1,312,106	100%	100%
Lighting-new construction	64.1	279,359	64.1	279,359	100%	100%
Total	**319.5**	**1,754,034**	**329.7**	**1,754,034**	**103%**	**100%**

11.4.2.1 Envelope

- No issues found.

11.4.2.2 HVAC

- One project, EA-0000950956, reported a baseline EER (*BaseLineEfficiency*) in the tracking system that differed from the current federal standard. The EM&V team recalculated the demand savings using the federal standard, resulting in a 188 percent realization rate for kilowatt savings for that project.

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11.4.2.3 Lighting (i.e., Retrofits Including Controls and New Construction)

- No issues found.

11.4.3 Tune-Up and Wi-Fi Thermostat Measurement and Verification Review

The EM&V team reviewed all program-reported tracking data to assess the extent to which it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review began using the TRM 9.2, the CoolSaver Program M&V Plan[116], and the Memorandum of Understanding for the review of measure-level savings assumptions. The EM&V team reviewed the tracking systems linkage to the TRM deemed savings and supplemental documentation methods used to estimate savings. After the measure-level review, the EM&V team verified energy savings calculations for engineering fundamentals, appropriateness, and accuracy.

Our review accomplished three primary objectives. First, it identified any initial high-level tracking system concerns. Second, it verified that the savings estimates in the tracking system are consistent with the savings outlined in TRM 9.2, used to estimate project savings. Third, it assessed the ability of the tracking system to support future evaluation needs.

The ArchEE database includes the key data for all projects and reported savings for *AC* and *heat pump tune-up* and *Wi-Fi thermostat* measures, which totaled 1,890 measures.

As part of the PY2024 evaluation, CLEAResult provided a tracking system extract, including pre- and post-test-out projects used as the basis for CLEAResult's PY2021–BY2023 efficiency loss (EL) calculations. The EM&V team reviewed this dataset, examined it for outliers, and used it to calculate two efficiency loss values for the commercial sector: one for a project with a refrigerant charge adjustment and one for a project without a refrigerant charge adjustment.

The *tune-up* tracking system's findings were similar to those from last year's review. Most of the key *tune-up* measure data is maintained in a separate database outside of ArchEE. The supplemental database was required for verifying the EL values, as ArchEE did not capture all four refrigerant charge values from iManifold.[117] As recommended last year, with continuous development and changes, the EM&V team recommends developing and maintaining a data dictionary to describe the data and document changes within this database.

Finally, as with previous years, it appears that the *commercial wi-fi thermostat* measures still require manual input of deemed energy (kWh/ton) and demand savings (kW/ton) values. This led to many instances of human error, leading to savings deviations (described in further detail below). Automating this process in the future will allow for more effective QA/QC and reduce the likelihood of errors.

11.4.3.1 Tune-Up and Wi-Fi Thermostat Measurement and Verification Findings

The EM&V team evaluated CLEAResult's savings calculations by reviewing the M&V sample of participants to confirm the savings methodology and results obtained, repeating the steps, and making calculation adjustments.

[116] The *tune-up* measure methodology was developed separately under the CoolSaver program prior to being included in the PISO program.
[117] https://imanifold.com/

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The ArchEE tracking system supplied all participant and unit-level data and claimed savings was the primary tool for checking reported savings and performing evaluation savings calculations.

Detailed findings from the M&V review for *tune-up* and *Wi-Fi thermostat* measures are presented below.

- Five *commercial Wi-Fi thermostat* measures installed on heat pump systems were using incorrect energy savings. For energy savings, reported savings were calculated as if the thermostat was installed on an air conditioning system. The EM&V team adjusted the energy savings to include the savings associated with heating with a heat pump. The affected project numbers are listed below:
    - 2022-453087,
    - 2022-453198,
    - 2022-453184,
    - 2022-431153, and
    - 2022-441370.
- Three *commercial Wi-Fi thermostat* measures installed on *air conditioning with electric resistance heat* systems were using incorrect energy savings. For energy savings, reported savings were calculated as if the thermostat was installed on a *heat pump* system by including energy savings associated with the *heat pump* heating algorithms. The EM&V team adjusted the energy savings to include only the *air conditioning cooling* algorithm, decreasing energy savings. The affected project numbers are listed below:
    - 2022-401220,
    - 2022-371773, and
    - 2022-441373.
- Fifty-five *commercial AC post-test-out* projects had reported savings that did not subtract out their respective pre-clean estimates from BY2023. The EM&V team adjusted the savings for these projects to subtract out the pre-clean estimates. Ten of the affected project numbers are listed below, with the complete list available upon request:
    - 2022-398182,
    - 2022-398173,
    - 2022-398154,
    - 2022-397517,
    - 2022-393217,
    - 2022-393386,
    - 2022-393469,
    - 2022-393749,
    - 2022-393772, and
    - 2022-393813.

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- Seventeen *commercial AC post-test-out* projects had reported savings that had deviations due to a manual data integration error. The EM&V team adjusted the savings for these projects to use the reported parameters and subtract out the pre-clean estimates. Ten of the affected project numbers are listed below, with the complete list available upon request:
    - 2022-393387,
    - 2022-393808,
    - 2022-394630,
    - 2022-394999,
    - 2022-396991,
    - 2022-397067,
    - 2022-398127,
    - 2022-398167,
    - 2022-399100, and
    - 2022-399199.
- One *commercial AC post-test* project (2022-397166) reported an EER_{Post} value in ArchEE that did not match the supplemental data provided by the implementer. The project also did not subtract the pre-clean estimate for the unit from BY2023. The EM&V team adjusted the savings for this project to use the EER_{post} calculated in the supplemental data and subtracted out the preclean estimate.
- One project (2022-389298) that was reported in ArchEE as a *commercial AC post-test-out* project was uploaded in error, as it was a duplicate project. The EM&V team adjusted the savings for this project to zero out the savings.

11.4.4 Engineering Desk Reviews

The EM&V team evaluated CLEAResult's savings calculations by reviewing the program tracking data and project documentation to confirm the savings methodology and results, repeating the calculation steps, and making adjustments.

The engineering desk reviews included reviewing the available project documentation in determining the source of key parameters for the deemed savings protocols from TRM 9.2. After selecting the best source of the key parameters from the available documentation, the savings were calculated based on TRM 9.2 algorithms and compared to the claimed savings.

In addition to the tracking system review, the engineering desk reviews also showed a consistent use of TRM 9.2 algorithms across all the measures claimed in the PISO program. The EM&V team made various minor adjustments to specific projects, which are described in detail in the project review results section below.

The EM&V team completed 30 engineering desk reviews of the PISO program accounts. These projects represented all measure categories in the program, except for *tune-up* measures, and had gross savings of 4,281,437 kWh, or 27 percent of the total PISO program recorded gross savings of 15,962,447 kWh. This percentage of total program savings is based on finalized ArchEE data from January 31, 2025.

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11.4.5 Site Visits

The EM&V team's evaluation plan included conducting 15 site visits to PISO program customers. These site visits also received an engineering review, as discussed above. The EM&V team's field inspector recorded the verified quantities, operation, building type, and space conditioning for each measure observed while on-site and collected additional information on critical parameters. For the PISO program, some of the key data and spot measurements obtained for essential parameters, as applicable, included:

- *envelope* measures: length of the installed door, gap width, and heating/cooling system type;
- *refrigeration* measures: quantity and make/model of installed ECM, refrigeration door gasket length and width, walk-in type (freezer or cooler), and evaporator fan motor size;
- *HVAC* measures: quantity, building type, and make/model of installed units; and
- *lighting* measures: base/new wattage, number of lamps per fixture, lamp/fixture make/model/type, base/new control type, building type, space heating/cooling type, and AOH.

The site visits found that most parameters recorded in the project documentation to calculate savings were accurate. Out of the 15 site visits conducted, there were two adjustments. One site found that fewer fixtures were retrofitted as part of the project than recorded in the documentation, while another site discovered that the HVAC unit models were different from the reported models. The following section describes the adjustments from the site visits in further detail.

11.4.6 Desk Review and Site-Visit Results

As noted earlier, the PY2024 PISO program impact evaluation efforts included an engineering analysis for a sample of 30 projects and a site visit for 15 of those projects reviewed. No savings adjustments were made for 24 of the projects in the sample. For the remaining six projects, the impact evaluation found various discrepancies in the project documentation or the site visit that required adjustments of parameters from the claimed savings estimates. The table below provides project-level realization rates by measure category for the 30 PISO projects reviewed by the evaluation. Detailed descriptions of the six projects with energy or demand savings adjustments follow Table 189.

Table 189. Public Institutions Solutions Offering—PY2024 Desk Review and Site Visit Results by Project

EM&V participant ID	EM&V review type*	Ex-ante savings		Ex-post savings		Realization rate	
		kW	kWh	kW	kWh	kW	kWh
Custom—CEI							
223002	Desk review	6.1	26,362	6.1	26,362	100.0%	100.0%
223006	Desk review	-	42,902	-	42,902	N/A	100.0%
223008	Desk review	25.0	92,482	25.0	92,482	100.0%	100.0%
223010	Desk review	20.7	76,805	20.7	76,805	100.0%	100.0%
323001	Desk review	-	617,713	-	617,713	N/A	100.0%
423001	Desk review	231.1	1,412,241	231.1	1,412,241	100.0%	100.0%

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EM&V participant ID	EM&V review type*	Ex-ante savings		Ex-post savings		Realization rate	
		kW	kWh	kW	kWh	kW	kWh
423009	Desk review	0.3	2,540	0.3	2,540	100.0%	100.0%
423010	Desk review	0.6	5,068	0.6	5,068	100.0%	100.0%
423013	Desk review	1.4	12,452	1.4	12,452	100.0%	100.0%
Custom—CEI total		**285.2**	**2,288,566**	**285.2**	**2,288,566**	**100.0%**	**100.0%**
Custom—other							
423006	Site visit	3.1	19,063	3.1	19,230	100.9%	100.9%
423012	Site visit	3.3	23,950	3.3	23,581	98.5%	98.5%
223004	Site visit	90.6	179,958	81.6	193,872	90.0%	107.7%
323004	Desk review	-	69,716	-	69,716	N/A	100.0%
Custom—other total		**97.1**	**292,686**	**88.0**	**306,399**	**90.7%**	**104.7%**
Lighting—deemed							
223001	Site visit	3.1	13,929	3.1	13,922	99.6%	100.0%
223003	Desk review	27.8	133,590	27.8	131,721	100.3%	98.6%
223004	Site visit	60.9	265,430	60.7	264,303	99.6%	99.6%
223005	Site visit	6.5	38,082	6.5	38,082	100.0%	100.0%
223009	Site visit	27.9	128,555	27.9	128,555	100.0%	100.0%
223011	Site visit	26.0	188,198	26.0	188,198	100.0%	100.0%
223012	Site visit	8.7	51,115	8.7	51,115	100.0%	100.0%
223013	Site visit	7.1	43,399	7.1	43,399	100.0%	100.0%
323003	Desk review	2.7	20,412	2.7	20,412	100.0%	100.0%
423002	Site visit	23.6	110,513	23.6	110,513	100.0%	100.0%
423003	Desk review	4.5	25,193	4.5	25,193	100.0%	100.0%
423004	Site visit	11.0	49,641	11.0	49,641	100.0%	100.0%
423005	Site visit	14.9	59,653	14.9	59,653	100.0%	100.0%
423006	Site visit	13.0	60,859	13.0	60,912	100.1%	100.1%
423007	Site visit	7.1	30,680	7.1	30,742	100.0%	100.2%
Lighting—deemed total		**245.0**	**1,219,250**	**244.8**	**1,216,364**	**99.9%**	**99.8%**
Lighting—non-deemed							
423008	Desk review	30.2	270,088	30.2	270,088	100.0%	100.0%
Lighting—non-deemed total		**30.2**	**270,088**	**30.2**	**270,088**	**100.0%**	**100.0%**

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EM&V participant ID	EM&V review type*	Ex-ante savings		Ex-post savings		Realization rate	
		kW	kWh	kW	kWh	kW	kWh
Other							
223007	Desk review	1.4	19,243	1.4	19,243	100.0%	100.0%
223001	Site visit	11.7	94,551	21.9	94,551	186.8%	100.0%
423003	Desk review	0.1	1,920	0.1	1,920	100.0%	100.0%
423006	Site visit	1.2	2,529	1.5	2,690	128.4%	106.4%
423007	Site visit	9.2	86,019	(1.7)	65,144	-18.5%	75.7%
323002	Site visit	0.4	3,679	0.4	3,679	100.0%	100.0%
323005	Site visit	0.3	2,906	0.3	2,906	100.0%	100.0%
Other total		**24.2**	**210,847**	**23.9**	**190,132**	**98.6%**	**90.2%**

The project-based savings adjustments are provided below by measure category and EM&V participant ID.

11.4.6.1 Custom

The *custom* strata consist of custom measures that do not have a prescriptive algorithm outlined in the TRM. The projects rely heavily on metered data for analysis and follow one of the four prescribed paths for energy efficiency analysis outlined in the International Performance Measurement & Verification Protocol (IPMVP). For the PISO program, the *custom* strata included desk reviews for one *HVAC custom controls* project, one *variable frequency drives* project, two *custom non-heating and cooling*, and nine *CEI* projects, with three site visits conducted on the non-CEI projects. Three projects had adjustments to savings.

- **Participant ID 223004 adjustment incorrect calculation type**. This project was for a newly constructed K-12 education building that installed five energy recovery units (ERVs). The reported savings used a coincidence factor of 0.84, while the deemed coincidence factor is 0.71 for K-12 schools in TRM 9.2. This adjustment decreased the demand savings.
- **Participant ID 423006 adjustment for incorrect efficiencies**. This project was for a newly added field house for a high school that installed 11 *electronically commutated motors for exhaust fans*. The part-load efficiencies (SEER) values were adjusted for RTU-101, RTU-102, and RTU-103 from 15 to 14.5; for RTU-203 from 15 to 13.4; and for RTU-201 from 15 to 14.44, as per the AHRI certificates. These adjustments increased energy and demand savings.
- **Participant ID 423012 adjustment for incorrect efficiencies.** This project involved the renovation of a fitness facility, which included the installation of two new dehumidifiers (Dectron LD-112). A variable frequency drive (VFD) was also installed on each exhaust fan and supply air blower for the dehumidifiers. The motor efficiency for the two Greenheck FCJ-315-BI motors was adjusted from 90 percent to 89.5 percent, while the efficiency for the two Dectron LD units was adjusted from 90 percent to 91.7 percent, in accordance with TRM V9.2 Table 361. These adjustments resulted in reduced energy and demand savings.

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11.4.6.2 Other

The *other* strata consist of prescriptive *non-lighting* measures, including *HVAC replace-on-burnout, refrigeration door gaskets and strip curtains*, and *commercial door air infiltration* projects. Seven desk reviews and five site visits were conducted on this stratum, with three adjustments to savings.

- **Participant ID 223001 savings adjustment for incorrect baseline efficiencies.** This project was for a renovation of a dormitory building for at a college campus that installed one 24,000 Btuh, eight 92,000 Btuh, and five 114,000 Btuh split units. For the HVAC measure, the baseline full load efficiency for cooling mode was adjusted from 12.0 EER in the tracking system to 10.8 EER as per Arkansas TRM 9.2 for units "ARUM096BTE5 Mixed Duct", "ARUM096BTE5 Non-Ducted", and "ARUM121BTE5 Non-Ducted". This increased demand savings.
- **Participant ID 423006 savings adjustment for incorrect efficiencies**. This project involved the addition of a new field house for a high school, which included the installation of three 36,000 Btuh packaged units, two 58,000 Btuh packaged units, one 23,000 Btuh packaged unit, and one 18,000 Btuh split unit. For the HVAC measures, the full-load efficiency for the cooling mode was adjusted from 11.4 EER to 12, and the part-load efficiency was adjusted from 14.25 SEER to 14.5, as per the AHRI certificate for the "ZYG04R4" units. These adjustments resulted in increased energy and demand savings.
- **Participant ID 423007 savings adjustment for incorrect efficiencies and capacities.** This project involved renovating an academic building on a college campus, which included the installation of one 1,600,000 Btuh packaged unit, one 420,000 Btuh packaged unit, two 90,000 Btuh packaged units, and two 18,000 Btuh split units. For the HVAC measures, multiple adjustments were made. The cooling capacity for the RNA-040 unit was adjusted from 480,000 Btuh to 420,000 Btuh, as per the AHRI certificate. The full-load efficiency of 10.4 EER was converted to 9.88 EER2, and the part-load efficiency of 13.7 IEER was converted to 13.015 IEER2 based on the recommended conversion factors from TRM 9.2 and the AHRI certification. These adjustments resulted in decreased energy and demand savings.

11.4.6.3 Lighting—Deemed

The *lighting—deemed* strata consist of lighting projects that strictly adhere to the deemed lighting AOH and CF outlined in the TRM. The deemed lighting strata comprised 52 projects with over 3,320 MWh of claimed savings. Fifteen desk reviews and twelve site visits were conducted for this stratum, with five adjustments to the claimed savings.

- **Participant ID 223001 savings adjustment for installed quantities and unknown reason.** This project was for a renovation of a residence Hall building for Arkansas Tech University that installed LED fixtures throughout the interior and exterior of their facility with lighting controls. For the *01-Jones Hall - 1st Floor Int, 007* measure, the evaluated savings differed from the reported savings for an unknown reason. Additionally, the quantity for the *Columbia Lighting-MPS-4-35-ML-C-W-E-U-ELL14* fixture type was adjusted from 1 to 0, as the on-site team could not locate this fixture in the community space, resulting in decreased demand and energy savings.

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- **Participant ID 223003 savings adjustment for installed quantities and fixtures wattages.** This project was a school building that replaced its existing fluorescent, incandescent, and HID lighting with LED lighting. Two adjustments were made to the project savings. The post-retrofit fixture quantity for the *outside old gym south hall* area was adjusted from one to 15 as per the post-installation form and to match the pre-installation quantity. The post-retrofit fixtures wattage for the *interior 800 entrance hall cans* area was adjusted from 29 W to 12 W per the submitted ES certificate for the Cooper Lighting LCR810RD9FSE020. These adjustments slightly decreased energy savings while slightly increased demand savings.
- **Participant ID 223004 savings adjustment for fixtures wattages.** This project involved a newly constructed K-12 education building that installed LED fixtures throughout the interior of the facility, along with lighting controls. The evaluation team made multiple adjustments to the lighting input wattages. The input wattage for 28 LED fixtures (4-SNLED-LD5-44SL-LW-UNV-L835-CD-1) was adjusted from 35 W to 34 W based on the DLC-tested input wattage of 33.5 W. The input wattage for 15 LED fixtures (1400-DOME-80-L35-12) was adjusted from 9 W to 12 W, according to the specification sheets. The input wattage for 61 LED fixtures (22FP3235C) was adjusted from 39 W to 29 W, as per the specification sheets. These adjustments resulted in reduced energy and demand savings.
- **Participant ID 423006 savings adjustment for fixtures wattages and linear footages.** This project involved the addition of a new field house for a high school, which included the installation of LED fixtures throughout the interior and exterior of their facility with lighting controls. Multiple adjustments were made for lighting measures. The linear footage for *area A wallpack, 135* was adjusted from 12 ft to 11.32 ft, and for *area B sidewalk, 126* from 147.59 ft to 180.59 ft, as per the provided drawings. The wattage for five LED fixtures (FEQ2 24 XX 4500LH 35K 1C UNV LD1 WH/EM) was adjusted from 34 watts to 35 watts as per the delisted DLC certificate (34.7 input watts). The wattage for 2 LED fixtures (FEQ2 22 XX 4500LH 35K 1C UNV LD1 WH/EM) was adjusted from 51 watts to 40 watts as per the delisted DLC certificate (39.95 input watts). These adjustments slightly increased demand and energy savings.
- **Participant ID 423007 savings adjustment for fixtures wattages and nonqualified/qualified fixtures.** This project involved renovating an academic building on a college campus, which included the installation of LED fixtures throughout the interior and exterior of their facility with lighting controls. For the lighting measures, a quantity of 3 LED fixtures (H450FR2ICATD010 / ML4D10FL9FS1E010 / TL41RMW/EBPLED14W) was found to be ES certified at 12 watts. These fixtures were adjusted to DLC/ES certified from non-certified. The wattage was adjusted from the reported 66 watts to 64 watts for fixture *RBEAM-8FT-500-SD-40K-80-PW-(XX)-U-1C* from the specification sheets. These adjustments slightly decreased demand savings while slightly increased energy savings.

11.4.6.4 Lighting—Non-Deemed

The *lighting—non-deemed* strata consists of lighting projects with an AOH or CF tracked in the tracking system that differs from the deemed TRM value. These TRM value differences sometimes consist of 8,760-hour safety lighting for individual projects or custom estimated AOH for each area of the facility. In PY2024, one project was in the *non-deemed lighting* strata, which accounted for over 270 MWh of claimed savings. A desk review was conducted on this stratum with no adjustment to the claimed savings.

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11.4.7 Program Website and Documentation Review

To understand the PISO program, the EM&V team interviewed program staff and reviewed all information available on EAL's website related to the program and supplemental documentation provided by EAL and CLEAResult. The EM&V team received the following documentation related to the program:

- an ArchEE data tracking system extract containing PY2024 participant information and savings;
- the Quality Control and Assurance Manual for EAL commercial programs, dated February 1, 2023;
- the PY2022 Program Manual for the Public Institutions Solutions program obtained from the EAL website; and
- updated white papers or M&V plans for VFDs, energy recovery ventilators, and CEI savings.

11.4.7.1 Program Website Review

Information on the PISO program website includes a general description of the program, such as eligibility and participation. It also provides a list of eligible measures and their incentive discounts. Example projects at an elementary school and a wastewater facility are displayed along with the estimated energy savings, incentive amount, and utility cost savings. A copy of the program manual was easily found on the website. A search link is provided to find a participating trade ally by zip code lookup.

11.4.7.2 Program Documentation Review

The EM&V team received program-related documentation—key to understanding the program and participation processes—including the PY2022 Program Manual and Quality Control and Assurance Manual. Key documents to understanding the program savings methodologies and measuring-level savings include the project-level files, ArchEE data, TRM 9.2, supplementary deemed savings methodologies for *overhead door weather stripping*, and ongoing reviews with EAL and CLEAResult staff.

The project details and documentation collected by EAL, the implementer, and trade allies for many sampled projects are sufficiently extensive. As bulleted in the section above, the critical baseline and new equipment assumptions—drivers of the *prescriptive* measure savings—are well described in trade ally proposals and equipment inventories. Additional documents collected at project approval support the equipment quantities and performance metrics. The documentation included invoices (support claimed quantities, equipment make, and models) and manufacturers' specification sheets (confirm equipment makes, models, sizes, types, and efficiencies). These are industry-standard best practices for documentation collection, which reduce the uncertainty of the project savings assumptions and development.

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In most cases, the EM&V team found that documentation matched the data recorded in the ArchEE tracking system. Equipment type, quantities, and in most cases, building/space conditions were accurately recorded compared to the efficient technology data and project file documentation reviewed. Also, across projects, most project files contained similar documentation. Most project files had, at a minimum, the signed customer proposal and project agreement. The proposal typically included the list of *retrofit* measures, with pre- and post-conditions and equipment parameters identified. Some files included multiple copies (e.g., initial proposal, final proposal) depending on whether the scope had changed during project development. Many project files included pre- and post-inspection forms with field inspector notes indicating site results.

Many projects also included pre- and post-installation photographic documentation. Photos were included with some proposals and inspection reports, but not all. Except for *direct install* projects, all project files included invoices. All invoices were found to have measure-level cost breakdowns, which helped support and confirm project details. Documentation of site-stipulated AOH was included in project file requests for the four projects that used stipulated AOH.

In PY2024, the EM&V team found the project documentation was as robust as BY2023, previous evaluations, and as a result, additional data requests to the implementer remained low compared to prior evaluations.

The project proposals include various details; however, the EM&V team would recommend adding other key parameters captured at the site used for savings calculations, including *building type* and *heating and cooling space types*.

PY2024 saw an improvement in the documentation's consistency for the make and model of all lighting products. Model numbers were often found on the work order forms and in all invoices with itemized quantities. DLC and ENERGY STAR certification sheets were also included for most lighting models. However, most lighting projects did not include the manufacturers' specification (spec) sheets. Manufacturers' specifications sheets are essential for LED exit signs because DLC or ENERGY STAR certification sheets are not available for these types of lights. As *lighting* measures contribute a significant portion of the program savings, documents that support key variables that are drivers of *lighting* measure savings include the post-installation lighting wattage. Having manufacturer's specification sheets would increase clarity between similar lighting types that may differ by color temperature, voltage, and other features that can impact the equipment's qualification and fixture input wattage.

11.5 OVERALL SAVINGS ESTIMATES

The ArchEE tracking system was the primary tool for checking claimed savings and evaluating savings calculations across a participant census. The tracking system contained the key assumptions and parameters necessary for calculating measure savings. After performing evaluation savings calculations across all measures claimed by the PISO program, the EM&V team found discrepancies in some measure categories. Those discrepancies that had the most considerable impact on program savings were discrepancies found during the tracking system data review and project-level engineering reviews for *tune-up* and *lighting* measures, as detailed above.

The EM&V team calculated savings across the program measures based on the tracking data review and desk review results. The overall PISO program evaluated savings resulted in lower energy and demand savings than those calculated by the program implementer (99.5 percent kilowatt-hour and 98.7 percent kilowatt realization rates). The evaluated savings are based on the results of savings calculations and adjustments made across the tracking system and supplemented by the results of the

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30 sampled projects, as discussed above. *Tune-up* measure savings were based on a comprehensive tracking system review.

The overall realization rates were affected most by variances between the claimed and evaluated savings (kilowatt and kilowatt-hour) for *lighting, other and custom – other* measures. *Lighting* projects savings were adjusted for different fixture types or quantities found during site inspections. *Custom-other* and *other* project savings were adjusted for part-load efficiencies on multiple HVAC units and the motor efficiencies on supply fans. Another major contributor to savings adjustments was from *commercial Wi-Fi thermostat measures* due to savings methodologies not matching tracked heating and cooling system types.

Table 190 shows that *lighting* measures had the most significant realization rate adjustments and the most significant gross changes in energy and demand savings.

Table 190. Public Institutions Solutions Offering—Final Evaluated Energy Savings and Realization Rates by Measure Strata

Strata	Ex-ante savings		Ex-post savings		Realization rate		Data source
	kW	kWh	kW	kWh	kW	kWh	
Custom—CEI	383.4	3,524,085	383.4	3,524,085	100.0%	100.0%	Desk reviews
Custom—other	97.1	292,686	88.0	306,399	90.7%	104.7%	Desk reviews and site visits
Lighting—deemed	671.2	3,320,857	670.7	3,312,995	99.9%	99.8%	Desk reviews and site visits
Lighting—non-deemed	30.2	270,088	30.2	270,088	100.0%	100.0%	Desk reviews and site visits
Other	38.2	436,562	37.7	393,673	98.6%	90.2%	Desk reviews and site visits
Tune-ups	1,278.6	8,118,169	1,255.5	8,081,996	98.2%	99.6%	Tracking system and M&V review
Total	**2,498.6**	**15,962,447**	**2,465.5**	**15,889,237**	**98.7%**	**99.5%**	

11.6 QUALITY CONTROL/QUALITY ASSURANCE PROCESSES

EAL worked with the implementer CLEAResult to develop a quality management process for all EAL commercial programs. This process can be used for projects with or without a trade ally. No changes were made to this procedure in PY2024.

For trade-ally projects, CLEAResult emphasizes trade ally training to remind trade allies of program processes, technical requirements for measures, application requirements, and awareness of the QC process. QC protocols include clear pass/fail thresholds for addressing trade ally performance. During the post-inspection of any project (trade-ally-driven or not), the fail condition results if the work scope is significantly incomplete, the efficient measures are found to be ineligible, or there are safety or code issues with the installation. A failed project causes the trade ally to be removed from the reduced inspection rate list that the program maintains and is put under probationary status. Once a trade ally is removed, that contractor must complete five consecutive projects without "failures" to be returned to the reduced inspection rate list. For a trade ally to qualify for the reduced inspection rate, they must complete five consecutive projects without failure, as determined by the program implementer.

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To be eligible for the program, customers must sign a customer agreement; as part of this agreement, the customer is willing to allow a field inspector to perform a QC inspection. These inspections could happen to any project regardless of scope. An inspection form was developed to perform standardized and consistent inspections to ensure the equipment is being used according to the guidelines outlined in the customer agreement.

Below are the steps that are followed during the QA/QC process, as outlined in the Quality Control and Assurance Process Manual:

- enrollment and customer verification,
- project documentation and completeness review,
- pre-engineering QC and approval,
- pre-installation inspection,
- pre-installation inspection corrections—trade-ally-driven projects,
- post-installation QC,
- post-installation inspection,
- post-installation inspection corrections—trade-ally-driven projects,
- post-engineering approval, and
- post-project review and closeout.

For all projects, the QA/QC process begins with verification that customers are eligible for participation in the program. Next, project documentation (including contact information, signed proposal, W9 forms, and pre-installation photos) is verified to be complete. Following the documentation check, the engineering team at CLEAResult checks to ensure that the project is installing eligible equipment and that savings parameters and calculations are accurate. For QA, the program staff also conducts reviews of each incentive application. After the engineering QC check, proposals that do not pass all aspects of the review are rejected and sent back for completion.

The next stage in the QA/QC process occurs during the pre-installation inspection stage, where pre-installation inspections are conducted to confirm pre-installation conditions. These inspections are completed for 100 percent of custom projects and the largest (approximately ten percent) trade-ally projects identified by kilowatt-hour savings. For the PISO program, larger projects are defined as those with savings estimated at over 150,000 kWh. Inspections are also completed for all *prescriptive* projects submitted by a non-trade ally or submitted by a trade ally under probation. A minimum of ten percent of all other projects between 10,000 and 150,000 kWh are also inspected. Also, for trade allies who are not under probationary status, at least ten percent of their total project quantities submitted are pre- or post-inspected. Any findings during the pre-inspection stage are returned to the trade ally to make corrections before the project may proceed.

Following the project's installation, a post-installation QC check is performed via a review of documentation to verify invoicing, any changes to the project, and a review of submitted photos. Any findings during this QC check are again returned to the trade ally to make corrections before the project proceeds. An on-site inspection is then conducted following the same sampling methodology as detailed in the pre-installation inspection above.

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At the final stage of the process, a final engineering review of the post-installation notes, completeness of documentation, and post-inspection photos is performed. Project savings calculations or incentives are adjusted as appropriate. The project and all required documentation are submitted to EAL for approval and closeout when this is complete.

As part of the PISO program evaluation activities, the EM&V team assessed the program's documentation and the 30 sampled projects used to inform the impact evaluation. The documentation included:

- program manual;
- program tracking system/database extracts;
- supplemental project-level documentation:
  - customer proposals and project agreements,
  - invoices,
  - pre-inspection form (where applicable),
  - post-inspection form (where applicable), and
  - photographic documentation (where applicable).

As noted in the prior sections, the EM&V team confirmed that the information presented in the ArchEE tracking system was mostly accurate compared to that in the project documentation. In general, the documentation provided project information that aligned with the stated QC goals, though the EM&V team found three specific areas for improvement:

1. Ensure photographic documentation provided is clear and legible and include nameplate photos of *lighting* model numbers and HVAC units, when possible,
2. Provide *lighting* specification sheets, and

Provide work orders and/or post-inspection reports on all projects.

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12.0 AGRICULTURAL ENERGY SOLUTIONS

The Agricultural Energy Solutions (AES) program offers farmers and agricultural customers the opportunity to make their property more efficient by offering farm audits, incentives for energy efficiency improvements, and education of agricultural equipment suppliers. The AES program aims to produce long-term, cost-effective electric savings for agribusinesses by installing energy efficiency measures and replacing aging, inefficient equipment. The program is available—on an agricultural commercial or industrial rate schedule—to all nonresidential Entergy Arkansas, LLC agribusiness customers, including various poultry, dairy, cattle, swine, delta/row crops, aquaculture, and horticulture facilities.

Incentives are available for agricultural customers to install energy efficiency equipment when building a new facility or replace aging, inefficient equipment. The program offers incentives for *custom* projects; *custom* is a comprehensive and customized approach for farmers who have energy efficiency needs. In some cases, *custom* measures use a combination of site-specific parameters as well as methodologies outlined in Arkansas Technical Reference Manual 9.2.

The program uses a streamlined process designed to overcome barriers to implementing energy efficiency projects. These barriers include:

- lack of customer awareness of energy efficiency technologies, benefits, and project payback;
- limited resources to identify energy efficiency opportunities;
- limited access to financial capital;
- absence of tools to quantify energy savings; and
- limited availability of energy efficiency technologies.

In program year 2024 (PY2024), 17 customers participated in the AES program. In support of the impact evaluation, the evaluation, measurement, and verification team conducted desk reviews and on-site measurement and verification for eight projects. Due to the limited participation, the EM&V team adjusted the sampling plan from 20 desk reviews to eight desk reviews. The sampled projects make up nearly 40 percent of the reported energy savings.

Table 191. Agricultural Energy Solutions—Data Collection and Evaluation Activities

NTG approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site M&V	Metered data analysis[118]
PY2022 EM&V research—participant surveys	Program staff interviews (2) Materials review	Census	8	8 (ride alongs)	None

[118] This column refers to EAL customer meter data provided to the EM&V team instead of primary metered data collected as part of the on-site M&V.

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12.1 KEY FINDINGS

Based on the PY2024 program tracking data,[119] the AES program reported implementing 2,983 *lighting* measures and 585 *variable frequency drives (VFD)* measures for 17 unique participants. Table 192 provides the program's participation and reported savings by measure category. In PY2024, *new construction lighting* projects provided the most savings for the program, similar to BY2023.

Table 192. Agricultural Energy Solutions—Reported Participation, Measures, and Savings

Measure category	Participants	Measures (quantity)	Reported program savings (kWh)	Percentage of program savings (kWh)
Custom—new construction	8	2,574	4,197,678	52.6%
Custom—retrofit	8	409	1,792,213	22.5%
Custom—non-lighting	8	585	1,983,935	24.9%
Grand total	**17**	**3,568**	**7,973,826**	**100.0%**

In PY2024, the AES program achieved 7,974 megawatt-hours in gross energy savings and 0.8 megawatts in gross demand savings, as shown in the table below. The AES program's evaluated savings resulted in slightly lower than reported energy savings and demand savings, resulting in realization rates of 100.0 percent for both energy and demand savings. The program exceeded the energy goals, achieving 118.7 percent of energy goals. However, the program achieved 74.3 percent of demand goals.

Table 193. Agricultural Energy Solutions—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	7,974	7,974	100.0%	99%	7,894	3.1%
Demand savings (MW)	0.8	0.8	100.0%	99%	0.8	1.0%

Table 194. Agricultural Energy Solutions—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	6,652	7,894	118.7%
Demand savings (MW)	1.1	0.8	74.3%

[119] The tracking system data extract is from January 13, 2025.

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12.2 RECOMMENDATIONS

The EM&V team has identified three key findings and recommendations through the evaluation process for consideration by EAL.

Table 195. Agricultural Energy Solutions—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Continue to work collaboratively with the EM&V team and seek review of large or unique *custom* projects.	Engaging the EM&V team early in the project timeline provides the opportunity to agree on calculation approaches, assumptions, and data collection needs for projects. This process has worked particularly well in developing assumptions and calculation methodology for large horticulture projects, which can be complex and unique, but would also be beneficial for poultry projects.
	Recommendation 2: Collect photo documentation on-site when able.	For one project, additional documentation, such as photos of the exterior, would have helped verify an appropriate baseline.
	Recommendation 3: Define additional measure descriptions to ArchEE to clarify measure type as the program expands with new measure offerings beyond *lighting*.	The current AES measures are listed in the ArchEE field *MeasureDesc* as *custom—new construction, custom—retrofit,* and *custom—non-lighting.* In PY2024, the measure description *custom—non-lighting* was used for a *VFD* measure while in BY2023 it was used for a *lighting controls* measure.

Table 196. Agricultural Energy Solutions—Status of Prior Year Recommendations

Status of prior year recommendations	

BY2023 impact recommendations	• Continue to work collaboratively with the EM&V team and seek review of large or unique *custom* projects.
	  ○ Continuing
	• Collect photo documentation on-site when able.
	  ○ Continuing
	• Limit *lighting* eligibility to ENERGY STAR®-, DesignLights Consortium (DLC)-, or Consortium for Energy Efficiency (CEE)- certified lamps, except in cases where the *lighting* is designed and used for animals.
	  ○ Continuing
	• Define additional measure descriptions to ArchEE to clarify measure type as the program expands with new measure offerings beyond *lighting*.
	  ○ Continuing

BY2023 process recommendations	• Continue to monitor and respond to barriers to wider agricultural participation, including inflationary pressures and high interest rates. ○ Continuing

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12.3 METHODOLOGY

12.3.1 Impact Evaluation

The evaluated savings results presented in this report are based on the results of savings calculations and adjustments made during the program documentation review, eight engineering desk reviews, and on-site M&V.

Program staff provided background information on the approach to energy savings, including savings calculations and data presented in those calculators and project close-out documents. The EM&V team also referred to relevant sections in TRM 9.2 to understand the savings methodology calculations used for *custom* projects and the general formulations of project savings approaches.

The EM&V team evaluated ICF Consulting's (ICF) savings calculations by reviewing the program tracking data and project documentation to confirm the savings methodology and results, repeating the calculation steps to verify accuracy.

12.3.1.1 Desk Reviews and Site Visit Ride-Alongs

The EM&V team coordinated post-installation site visits with program implementation staff as part of the PY2024 impact evaluation. These site visits were conducted with ICF program staff to reduce the burden on program participants and manage biosecurity access issues while allowing both the EM&V team and implementation staff to gather necessary post-installation data points. The EM&V team conducted ride-alongs and desk reviews on eight projects. Because of limited participation, the EM&V team adjusted the evaluation scope from five ride-alongs and up to 20 desk reviews to eight ride-alongs and eight desk reviews, which accounted for nearly 40 percent of the program savings.

The EM&V team found that the approaches used to calculate savings were generally reasonable. The *lighting* and VFD calculation workbooks were comprehensive, detailed, high quality, and followed good industry practices. As a result, the EM&V team utilized the underlying calculation approaches to verify savings.

12.4 DETAILED IMPACT EVALUATION RESULTS

12.4.1 Reported Savings Methodology

The AES program's savings algorithms and approaches followed standard industry practice and TRM requirements for *custom* projects. There were distinct differences in the savings algorithms for *new construction lighting* and *retrofit lighting*. Using standard TRM algorithms for *lighting* projects involving heated spaces, a therms heating penalty was calculated. The details of each approach are described below.

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12.4.1.1 New Construction Lighting for Poultry Houses

New construction lighting projects calculated savings based on an assumed lighting power density (LPD) of 0.8 W per square foot. The custom LPD and coincidence factor was developed in 2015 by EAL, ICF, and the EM&V team based on the warehouse building type. The algorithms for savings are:

$$kWh_{savings} = AOH \times \frac{LPD * Sq.Ft. - Installed\ Watts}{1{,}000} \times IEF_e$$

where:

AOH = custom annual operating hours of the lit space

Sq. Ft. = square footage of the lit space

LPD = 0.8 W per square foot

Installed Watts = sum of efficient lighting watts installed in the lit space

IEF_e = interactive effects factor for energy based on heating and cooling types

$$kW_{savings} = c.f. \times \frac{LPD * Sq.Ft. - Installed\ Watts}{1{,}000} \times IEF_d$$

where:

c.f. = coincidence factor (CF), typically 0.77

IEF_d = interactive effects factor for energy based on heating and cooling types

$$therm_{penalty} = IEF_g * kWh_{savings}$$

where:

IEF_g = 0.008 therms/kWh

kWh savings = savings calculated by the kilowatt-hour savings formula above for interior lighting projects

12.4.1.2 Lighting for Horticulture Applications

New construction and *retrofit lighting* applications for horticulture projects calculate savings using a *grow space square footage* method and industry-established grow lights that meet the photosynthetic photon efficacy (PPE) as required by the crop type as the baseline. The methodology is based on the Illinois TRM *Commercial Grow Lights* measure and incorporates key parameters from the Arkansas TRM, such as interactive effects, as well as site-specific *custom* parameters, such as AOH. The algorithms for savings are:

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$$kWh_{savings} = AOH \times Sq.Ft. \times \frac{Watts/Sq.Ft_{Base} - Watts/Sq.Ft_{EE}}{1{,}000} \times IEF_e$$

where:

Watts/Sqft$_{Base}$ = Baseline wattage per square foot

Watts/Sqft$_{EE}$ = Efficient wattage per square foot

$$kW_{savings} = c.f. \times Sq.Ft. \times \frac{Watts/Sq.Ft_{Base} - Watts/Sq.Ft_{EE}}{1{,}000} \times IEF_d$$

where:

c.f. = coincidence factor, typically 0.95 for vegetative crops or 0.76 for flowering crops[120]

12.4.1.3 Retrofit Lighting

Savings are calculated for *retrofit lighting projects* by comparing the less efficient baseline wattage to the installed high-efficiency wattage. The algorithms for savings are:

$$kWh_{savings} = AOH \times \frac{Baseline\ Watts - Efficient\ Watts}{1{,}000} \times IEF_e$$

where:

Baseline Watts = total watts of the replaced lighting prior to the project

$$kW_{savings} = c.f. \times \frac{Baseline\ Watts - Efficient\ Watts}{1{,}000} \times IEF_d$$

$$therm_{penalty} = IEF_g * kWh_{savings}$$

12.4.2 Desk Review Results

As noted earlier, the PY2024 AES program impact evaluation efforts included an engineering analysis for a sample of projects from eight unique account holders. Table 197 provides measure-level realization rates for the AES projects reviewed during the evaluation.

[120] Illinois Statewide Technical Reference Manual —4.1.11 Commercial LED Grow Lights

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Table 197. Agricultural Energy Solutions—PY2024 Desk Review Results by Measure Category

Measure category	Reported savings		Evaluated savings		Realization rate	
	kWh	kW[121]	kWh	kW[122]	kWh	kW
Custom - new construction	2,460,878	280.0	2,460,878	280.0	100.0%	100.0%
Custom - retrofit	7,588	-	7,588	-	100.0%	N/A
Custom non-lighting	627,294	-	627,294	-	100.0%	N/A
Total	**3,095,761**	**280.0**	**3,095,761**	**280.0**	**100.0%**	**100.0%**

12.4.3 Site Visit Results

In PY2024, the EM&V team coordinated post-installation site visits with program implementation staff for eight projects, reducing the burden on program participants and managing biosecurity access issues while allowing both the EM&V team and implementation staff to gather necessary post-installation data points. The eight PY2024 projects received rebated *light-emitting diode (LED) lighting* and *VFDs* through EAL's program; one project installed *custom—new construction lighting,* five projects included both *custom—new construction lighting* and *custom—retrofit lighting,* and two projects installed *custom—non-lighting VFD* measures.

At each project, the EM&V team confirmed the lamp type and location and that all lamps were successfully installed and operational. Additionally, the buildings' dimensions were confirmed—a key parameter for *new construction lighting* projects. *Lighting* schedules and programs were confirmed with farmers.

Overall, the EM&V team verified that all measures on-site rebated through the AES program were installed, functional, and matched wattages claimed through program tracking data.

12.5 OVERALL SAVINGS ESTIMATES

The EM&V team calculated savings results at the measure category level. The overall AES program evaluated savings resulted in 100.0 percent realization rates for both energy and demand. Table 198 shows the evaluated savings.

Table 198. Agricultural Energy Solutions—Final Evaluated Energy Savings and Realization Rates by Measure Category

Measure category	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Custom—new construction	4,197,678	489.0	4,197,678	489.0	100.0%	100.0%	Desk review and on-site M&V
Custom—retrofit	1,792,213	336.4	1,792,213	336.4	100.0%	100.0%	Desk review and on-site M&V

[121] A dash indicates that there are no kilowatt savings associated with the respective measure.
[122] Ibid

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Measure category	Reported savings		Evaluated savings		Realization rate		EM&V source
	kWh	kW	kWh	kW	kWh	kW	
Custom non-lighting	1,983,935	-	1,983,935	-	100.0%	100.0%	Desk review and on-site M&V
Total	**7,973,826**	**825.4**	**7,973,826**	**825.4**	**100.0%**	**100.0%**	

12.6 QUALITY CONTROL/QUALITY ASSURANCE PROCESSES

The AES program implementer, ICF, has developed quality assurance/quality control (QA/QC) processes. QA emphasizes trade ally training to keep trade allies updated on program processes, technical requirements for measures, application requirements, and awareness of the QC process. For QC, ICF reviews each incentive application, confirms pre-installation conditions, conducts on-site inspections to confirm post-installation conditions, and adjusts project savings calculations or incentives as appropriate.

As part of the AES evaluation activities, the EM&V team assessed the documentation provided for the eight sampled projects used to inform the impact evaluation. The documentation included the following:

- completed application,
- post-inspection form,
- invoices, and
- savings calculation workbook.

As noted in the prior section, the EM&V team confirmed that the tracking system's information was generally accurate in terms of that shown in the project documentation. Across the multiple projects and points for documentation, the AES documentation provided a mostly consistent description of the project aligned with the stated QC goals.

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13.0 RESIDENTIAL DIRECT LOAD CONTROL

The Residential Direct Load Control (DLC) program (Summer Advantage) is a demand response program focusing on residential air-conditioning loads. The program is implemented by Itron, who (1) provides marketing services, a call center, and load control receiver (LCR) equipment and services; (2) conducts program tracking; and (3) calculates event-level and program savings for Entergy Arkansas, LLC (EAL).

The program aims to reduce peak kilowatt loads during load control events in the summer months (June 1 through September 30). To reduce the time an air conditioner operates, participants in the program have an LCR installed on their air conditioner. Participant incentives are based on the participant's choice of 50 percent cycling or 75 percent cycling. The participant receives an installation incentive based on their participation rate, and annually, the participant will receive a loyalty incentive equal to the installation bonus.

In program year 2024 (PY2024), the Residential DLC program responded to four events on four separate days. One of the events was a test event, used to verify equipment operability and measurement and verification (M&V) sample functionality, while the others were used to reduce load. An M&V sample is maintained by Itron, with 120 participants having interval data loggers that provide five-minute readings of equipment kilowatts. The M&V sample is structured to represent the program population (12,944 participants at the end of the event season) and provides the data to calculate savings. Calculating savings would not be possible with only the customers' standard utility revenue meters. The evaluation, measurement, and verification (EM&V) team estimated kilowatt savings via Midcontinent Independent System Operator (MISO) demand response curtailment algorithms and regression analysis to support the impact evaluation.

Table 1 details the evaluation activities conducted for the program in PY2024.

Table 199. Residential Direct Load Control—Data Collection and Program Inputs

Net-to-gross (NTG) approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site M&V	Metered data analysis[123]
Deemed at 1.0 as industry practice	Program staff interviews (2) Materials review Participant surveys (70)	Census	None	None	Census

13.1 KEY FINDINGS

In PY2024, the program achieved 14.1 MW in gross demand savings, as shown in Table 200. The EM&V team found that using the M&V sample deployed on direct control units in demand response curtailment calculations is appropriate. The evaluated savings using the MISO-based calculations differed slightly from Itron's calculations due to rounding differences in calculating per-device savings. These differences resulted in a realization rate of 96.7 percent and will be further detailed in Section 13.4 of this report.

[123] This column refers to EAL customer meter data provided to the EM&V team as opposed to primary metered data collected as part of the on-site M&V.

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Table 200. Residential Direct Load Control—Program Savings—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio*	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	-	-	N/A	N/A	N/A	N/A
Demand savings (MW)	14.1	13.6	96.7%	100.0%	13.6	17.0%

* The PY2024 NTG ratio was deemed 100 percent, keeping with industry practice for demand-response programs requiring participation in utility curtailment events.

** The Residential DLC program does not claim energy savings. Therefore, these cells are represented with a dash.

The program met 129.5 percent of the demand savings goal, as detailed in Table 201.

Table 201. Residential Direct Load Control Program—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	-	-	-
Demand savings (MW)	10.5	13.6	129.5%

* The Residential DLC program does not claim energy savings. Therefore, these cells are represented with a dash.

In PY2024, the Residential DLC program process evaluation indicated that participants remain highly satisfied with the program, with no substantive concerns about the events. Almost all respondents said they planned to continue participating in the program. Only one had concerns about how warm it got in their home, preventing them from wanting to participate in the program again. Some customers mentioned knowing about the Smart DLC program and wanting to learn more about that program and possible transition to that one.

13.2 RECOMMENDATIONS

The EM&V team has identified three recommendations for consideration by EAL through the evaluation process, presented in Table 202.

Table 202. Residential Direct Load Control—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Consider analyzing the two curtailment strategies separately.	The two curtailment strategies (50 and 75 percent) likely produce different demand reductions. Analyzing these two groups separately would provide insight into the extent of potential savings achievable through a single curtailment strategy.

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Type	Recommendation	Key finding
PY2024 process recommendations	**Recommendation 2:** Consider an annual communication before the event season to thank customers for their continued participation and remind them of the financial benefits.	While program satisfaction was high, customers did offer suggestions for program improvements. Since most have been enrolled in the program for a long time, they do not recall all the details about it or the incentives they will receive. So, annual communication about the program could be welcomed.
	Recommendation 3: Continue to provide customers with details about the Smart DLC program and the option to switch to that program.	At least one customer mentioned wanting to transition to the Smart DLC program. As customers are no longer enrolled in this program, EAL could consider providing customers the option to switch to the Smart DLC program.

Table 203. Residential Direct Load Control—Status of Prior Year Recommendations

Status of prior year recommendations	
BY2023 impact recommendations	• Model the effect of weather on demand using a lagged time variable. ○ Under consideration.
BY2023 process recommendations	• Continue to monitor and utilize opportunities to move participants from *radio technology* to *smart thermostats* in the next program cycle. ○ Under consideration.

13.3 METHODOLOGY

Itron provides three savings calculations to EAL, all evaluated by the EM&V team. Savings are calculated using three methods approved by MISO to support EAL's settlement with MISO. Each method used for EAL savings results is described below; Table 204 shows the events in PY2024.

Table 204. Residential Direct Load Control—PY2024 Load Control Events

Date	Start time (CDT)	End time (CDT)	Participants	Event type
06/03/2024	13:00	14:00	12,944	Test event
06/14/2024	15:00	19:00	12,944	Normal event
07/31/2024	15:00	19:00	12,944	Normal event
08/27/2024	16:00	19:00	12,944	Normal event

Savings are based on the M&V sample meter data for each event. The baseline is constructed using ten eligible days before the event and applying no adjustment (*MISO Calculation #1*), a symmetrical multiplicative adjustment (*MISO Calculation #2*), or a weather-based adjustment (*MISO Calculation #3*). These are described in more detail below.

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13.3.1 MISO Calculation Evaluated Savings

The EM&V team evaluated Itron's calculations of Residential DLC program savings registered with MISO. MISO's Business Practice Manual[124] specifies three calculation options.

13.3.1.1 MISO Calculation #1—Unadjusted Baseline

MISO's unadjusted baseline calculation approach utilizes the ten most recent eligible days (non-holiday, non-event weekdays) before the event. The average load for each 15-minute interval is calculated by averaging the five-minute kilowatt load intervals recorded by the data loggers for each M&V sample member. An average (per active device) load is calculated for the M&V sample for that interval. For a given 15-minute period, the average device load is averaged across the ten days to represent the unadjusted baseline load for that period.

13.3.1.2 MISO Calculation #2—Symmetrical Multiplicative-Adjusted Baseline

MISO's symmetrical multiplicative-adjusted baseline corrects the unadjusted baseline load schedule to represent actual event-day loads. Adjustment is conducted to generate a more accurate counterfactual baseline load to represent what would have occurred on an event day without a DLC event. The adjustment factor uses pre-event loads during baseline and event days to inform the degree of adjustment required. If pre-event loads on event days exceed baseline loads, baseline loads will be scaled upwards. If pre-event loads on event days are less than baseline loads, baseline loads will be scaled downwards. The multiplicative adjustment procedure is as follows:

1. Extract three hours of pre-event loads beginning four hours prior to the event start from both the unadjusted baseline load and the event-day load. For example, for an event starting at 14:00, extract unadjusted baseline and event-day loads for three hours spanning 10:00 to 13:00.
2. Calculate the *symmetrical multiplicative adjustment factor* by taking the ratio of (1) the sum of the three hours of event-day loads and (2) the sum of three hours of unadjusted baseline loads. This adjustment factor may not adjust the baseline by more than 20 percent in either direction. If the multiplicative adjustment exceeds 1.2, then assume the multiplicative adjustment is 1.2. If the multiplicative adjustment is less than 0.8, assume the multiplicative adjustment is 0.8.
3. Calculate the *symmetrical multiplicative-adjusted baseline* by multiplying the unadjusted baseline load by the *symmetrical multiplicative adjustment factor*.

13.3.1.3 MISO Calculation #3—Weather-Adjusted Baseline

MISO's weather-adjusted approach to baseline calculations incorporates an unadjusted baseline with a factor describing how temperature affects non-event loads. Adjustment is conducted to generate a more accurate counterfactual baseline load to represent what would have occurred on an event day without a DLC event. Instead of using pre-event loads to determine the adjustment to baseline loads, the sensitivity of loads to temperature changes is used to predict what loads would have been without an event. The procedure is as follows:

1. Determine the change in loads relative to a change in temperature (the temperature adjustment, expressed in kilowatt per degree Fahrenheit) using data from eligible non-event, non-holiday weekdays.

[124] Business Practices Manual Demand Response, Manual No. 26. MISO, October 2024.

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2. Determine the average temperature during baseline days' hours corresponding to each hour of an event. These baseline days are the same ten prior non-event, non-holiday weekdays used to calculate the unadjusted baseline load.
3. Calculate the difference in temperature between (1) the average of the baseline days' hours corresponding to the event hours and (2) the actual temperatures recorded during the event's hours.
4. Calculate the weather adjustment factor by multiplying the temperature difference by the temperature adjustment.
5. Calculate the weather-adjusted baseline by adding the weather adjustment factor to the unadjusted baseline load.

13.3.1.4 Savings Calculation

Savings for a given 15-minute period are calculated by subtracting the event-day per-device load from the adjusted baseline per-device load. The resulting per-device savings are multiplied by the number of devices active in the program. For contract purposes, the number of devices used to calculate savings is the device count at the end of the PY2024 load control season (12,944 active devices in PY2024). Using the ending device count is a conservative approach as some participant attrition occurs during the control season.

13.3.1.5 Snapback Calculations

Each of the three non-test events demonstrated a large snapback in the hour directly following the event. To estimate the snapback effects, the EM&V team compared the event-day per-device load in the hour after the event to the largest of the evaluated baselines. This gives the most conservative estimate of the snapback effect. These per-device effects are then compared to the evaluated per-device savings for each event to arrive at an overall estimated event savings.

13.3.2 Process Evaluation

13.3.2.1 Participant Survey

The participant survey was used to inform the process evaluations based on the *Arkansas TRM Volume 9.2 EM&V Protocols*' guidance. Specifically, the participant survey investigated participation experiences, program satisfaction, and demographics.

13.3.2.1.1 Sampling Methodology

The sample frame for the Residential DLC participants consisted of current, active participants. Tetra Tech received a list of active participant premises from the program implementer, Itron.[125] Tetra Tech matched customer contact information from EAL's residential and commercial customer records by premise and customer account numbers. Table 205 summarizes the number of records dropped from the final survey sample frame and the reasons for exclusion.

[125] Filename: CurrentActiveDevices_100124_Premises_TetraTech.xlsx

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Table 205. Residential Direct Load Control—Participant Survey Sample Frame Summary

Participants	Number of records
Original population file	10,361
Excluded – missing account data	58
Excluded – duplicated account	52
Final survey sample frame	**10,251**

The targeted number of completed surveys was 70. Assuming a 25 percent response rate, the initial sample consisted of 280 accounts randomly selected from the sample frame using a simple random sample.

The participant survey was implemented through the EM&V team's in-house Survey Research Center (SRC) via computer-assisted telephone interviews. Calling began on December 23, 2024, and ended on January 18, 2025. The EM&V team's in-house SRC completed 70 surveys, averaging 10 minutes. Table 206 shows the participant survey response rate.

Table 206. Residential Direct Load Control—Participant Survey Response Rate

Disposition	Overall
Starting sample	**280**
Commercial line	0
Not a utility customer	0
Affiliated with utility	0
Eligible sample	**280**
Does not recall participating	7
Refusal	12
Incompletes (partial surveys)	0
Language barrier	1
Bad number	57
Attempted but not completed*	133
Completed	70
Response rate (completed/eligible sample)	**25.0%**

*The average number of attempts on the active sample was over seven.

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13.4 DETAILED IMPACT EVALUATION RESULTS

13.4.1 MISO Calculation Evaluated Savings

The EM&V team evaluated Itron's MISO savings calculations by reviewing the M&V sample load data, confirming the methodology and results, repeating the calculation steps, and making adjustments. To conduct the evaluation, the EM&V team received the following from Itron:

- M&V sample five-minute load data, spanning May 15 through September 30, 2024;
- a savings report Itron provides to EAL describing Itron's methodology for sampling and savings calculations, along with a description of the sample, descriptions of each event, and other pertinent PY2024 program details; and
- discussions to clarify data definitions, calculation methodology steps, and information interpretations in their report.

The EM&V team and Itron's per-device savings calculations were similar, as were the overall evaluated savings. Itron reported savings of 14.11 MW, calculated using the weather-adjusted savings from the event on August 27 from 16:00 to 17:00 of 1.09 kW per device multiplied by 12,944 active endpoint devices. The EM&V team calculated a savings value of 1.05 kW per meter during the same event. Using this per-device savings value multiplied by the same 12,944 active endpoint devices, the EM&V team estimated evaluated savings of 13.64 MW.

MISO Calculation #1—Unadjusted Baseline

All MISO Calculation methods require the selection of baseline days. The *MISO Business Practices Manual (BPM) method* stipulates that the ten prior non-event event eligible days are selected to represent the baseline. The average load during those baseline days is calculated for a given event hour, representing an unadjusted baseline. Table 207 highlights the unadjusted baseline calculations Itron and the EM&V team undertook.

Table 207. Residential Direct Load Control—MISO Calculation #1—MISO Unadjusted Baseline Calculations

Date	Start time (CDT)	End time (CDT)	Itron baseline	EM&V team baseline
06/03/2024	13:00	14:00	0.57	0.57
06/14/2024	15:00	16:00	0.84	0.84
06/14/2024	16:00	17:00	0.88	0.88
06/14/2024	17:00	18:00	0.90	0.91
06/14/2024	18:00	19:00	0.86	0.86
07/31/2024	15:00	16:00	1.03	1.02
07/31/2024	16:00	17:00	1.07	1.06
07/31/2024	17:00	18:00	1.08	1.07

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Date	Start time (CDT)	End time (CDT)	Itron baseline	EM&V team baseline
07/31/2024	18:00	19:00	1.02	1.01
08/27/2024	16:00	17:00	1.40	1.39
08/27/2024	17:00	18:00	1.37	1.36
08/27/2024	18:00	19:00	1.27	1.27

MISO Calculation #2—Symmetrical Multiplicative-Adjusted Baseline

MISO's *symmetrical multiplicative-adjusted baseline* corrects the unadjusted baseline load schedule calculated above to be more representative of actual event-day loads. Adjustment is conducted to generate a more accurate counterfactual baseline load to represent what would have occurred on an event day without a direct load control event. The adjustment factor uses pre-event loads during baseline and event days to inform the degree of adjustment required. If pre-event loads on event days exceed baseline loads, baseline loads will be scaled upwards. If pre-event loads on event days are less than baseline loads, baseline loads will be scaled downwards. The multiplicative adjustment procedure is as follows:

1. Extract three hours of pre-event loads beginning four hours before the event starts from both the unadjusted baseline load and the event-day load.
2. Calculate the *symmetrical multiplicative adjustment factor* by taking the ratio of (1) the sum of the three hours of event-day loads and (2) the sum of three hours of unadjusted baseline loads.
3. Calculate the *symmetrical multiplicative-adjusted baseline* by multiplying the unadjusted baseline load by the *symmetrical multiplicative adjustment factor*.

The MISO BPM requires that the *symmetrical multiplicative adjustment* does not lead to an adjustment greater than 20 percent of the unadjusted baseline load. Calculated *symmetrical multiplicative adjustment factors* exceeded 1.20 for all non-test event days; therefore, all non-test event days are assigned a *symmetrical multiplicative adjustment* of 1.20. The test event day, June 3, 2024, had a *symmetrical multiplicative adjustment* smaller than 0.8, and therefore it was assigned a value of 0.8. The EM&V team's assignment of these 20 percent adjustment caps matches Itron's.

Savings Calculation

The savings calculation for each event hour is as follows:

kW Savings = Symmetrical Multiplicative Adjusted Baseline kW – Metered Load

Across all the event hours during PY2024, the highest single hour represents the program savings. Under the *symmetrical multiplicative adjustment method*, both Itron and the EM&V team determined this hour to be on August 27 from 16:00 to 17:00. For this hour, the realization rate is 99.6 percent. Table 208 summarizes each hour's load reduction, with Table 209 summarizing the corresponding event-hour total kilowatt savings and realization rates.

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Table 208. Residential Direct Load Control—MISO Calculation #2—MISO Adjusted Baseline and Per-Device Savings Comparisons

Date	Start time (CDT)	End time (CDT)	Itron adjusted baseline	EM&V team adjusted baseline	Itron SMA adjusted reduction (per device kW)	EM&V team SMA adjusted reduction (per device kW)
06/03/2024	13:00	14:00	0.46	0.46	0.30	0.29
06/14/2024	15:00	16:00	1.00	1.01	0.45	0.44
06/14/2024	16:00	17:00	1.05	1.06	0.24	0.24
06/14/2024	17:00	18:00	1.08	1.09	0.28	0.28
06/14/2024	18:00	19:00	1.03	1.03	0.25	0.24
07/31/2024	15:00	16:00	1.24	1.22	0.56	0.53
07/31/2024	16:00	17:00	1.28	1.28	0.37	0.35
07/31/2024	17:00	18:00	1.30	1.28	0.42	0.40
07/31/2024	18:00	19:00	1.22	1.21	0.38	0.36
08/27/2024	16:00	17:00	1.68	1.67	0.97	0.97
08/27/2024	17:00	18:00	1.64	1.63	0.73	0.72
08/27/2024	18:00	19:00	1.53	1.52	0.67	0.66

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Table 209. Residential Direct Load Control—MISO Calculation #2 Results

Date	Start time (CDT)	End time (CDT)	Number of participating devices	Itron per device kW savings	EM&V team per device kW savings	Itron event-hour savings	EM&V team event-hour savings	Realization rate (%)
06/03/2024	13:00	14:00	12,944	0.30	0.29	3,883	3,795	97.7
06/14/2024	15:00	16:00	12,944	0.45	0.44	5,825	5,676	97.4
06/14/2024	16:00	17:00	12,944	0.24	0.24	3,107	3,097	99.7
06/14/2024	17:00	18:00	12,944	0.28	0.28	3,624	3,579	98.8
06/14/2024	18:00	19:00	12,944	0.25	0.24	3,236	3,169	97.9
07/31/2024	15:00	16:00	12,944	0.56	0.53	7,249	6,913	95.4
07/31/2024	16:00	17:00	12,944	0.37	0.35	4,789	4,521	94.4
07/31/2024	17:00	18:00	12,944	0.42	0.40	5,436	5,163	95.0
07/31/2024	18:00	19:00	12,944	0.38	0.36	4,919	4,602	93.6
08/27/2024	16:00	17:00	12,944	0.97	0.97	12,556	12,500	99.6
08/27/2024	17:00	18:00	12,944	0.73	0.72	9,449	9,348	98.9
08/27/2024	18:00	19:00	12,944	0.67	0.66	8,672	8,515	98.2

MISO Calculation #3—Weather-Adjusted Baseline

Itron calculated a temperature adjustment by developing a regression equation that explained air temperatures' influence[126] on the resulting M&V sample loads. As detailed in Itron's Evaluation Report, five-minute load data were aggregated to create a single per-device load covering the hours of 14:00 to 20:00 from June 1 through September 30, 2024. Holidays and weekends were excluded from the temperature adjustment analysis. Itron's regression model used the entirety of the date range, absent the excluded days. The result is a dataset of the average load for each hour.

Itron then conducted a regression analysis using the following equation:

$$kW_t = \alpha + \beta\, Temperature_t + e_t$$

This equation posits that load during a given hour (*t)* can be primarily explained by a given hour's dry-bulb air temperature. Itron's resulting regression output showed a temperature coefficient of 0.0584 kW per degree Fahrenheit.

[126] Temperature data provided by NOAA for Little Rock, AR, weather station KLIT; 2-meter dry bulb temperature. See: www.ncdc.noaa.gov.

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The EM&V team replicated the analysis utilizing the same equation structure as Itron and limited the date range to the control season (June 1 through September 30, 2024), excluding holidays and weekends. The EM&V team also excluded event days from the regression analysis. To ensure that the temperature adjustment covered each event hour, the EM&V team limited the hours of the selected days to fall between 13:00 and 20:00, one additional hour than Itron used. The EM&V team's regression equation results for temperature ($\hat{\beta}$) of 0.0601 kW per degree Fahrenheit, which is comparable to Itron's coefficient. The EM&V team found in the regression model that the temperature variation explained 78.1 percent of the variation in the average consumption.

The EM&V team and Itron have similar calculation results for the weather-adjusted baseline method, with Itron's results consistently being slightly higher due to the different temperature coefficients. For the event hour with the highest performance—August 27, 2024, from 16:00 to 17:00—Itron calculated a savings of 1.09 kW per device, while the EM&V team calculated a savings of 1.05 kW per device.

Weather-Adjusted Baseline

All MISO Calculation methods require the selection of baseline days. The MISO BPM method stipulates that the ten prior non-event, event-eligible days are selected to represent the baseline. The average load during those baseline days is calculated for a given event hour, representing an unadjusted baseline. Next, the average temperature for that same hour on the baseline days is calculated. The temperature of the event day's hour is then subtracted from the average baseline days' temperature for that hour to determine the temperature differential between the baseline days' and event day's temperature. The temperature coefficient is multiplied by the temperature difference to calculate an additive kilowatt adjustment to the unadjusted baseline kilowatt.

The baseline condition is based on the average hourly load per device for EAL's MISO calculation. This baseline is calculated using the M&V sample's metered results, averaging each sampled participant's five-minute metered data into hourly increments. The resulting equation for the weather-adjusted baseline for a given event hour is as follows:

Baseline kW = Unadjusted Baseline Load + Temperature Coefficient * (Baseline Temperature – Event Hour Temperature)

The EM&V team's calculation of the baseline loads and temperature records is identical to those presented in Itron's MISO Calculation, shown in Table 210. Minor differences of 0.07 kW per device or less are attributable to rounding temperature values and are not consequential.

Table 210. Residential Direct Load Control—MISO Calculation #3—MISO Temperature and Per-Device Savings Comparisons

Date	Start time (CDT)	End time (CDT)	Itron baseline temperature	EM&V team baseline temperature	Itron weather-adjusted reduction (per-device kW)	EM&V team weather-adjusted reduction (per-device kW)
06/03/2024	13:00	14:00	83.6	83.1	-0.21	-0.20
06/14/2024	15:00	16:00	85.6	85.7	0.89	0.83
06/14/2024	16:00	17:00	85.5	85.5	0.68	0.63

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Date	Start time (CDT)	End time (CDT)	Itron baseline temperature	EM&V team baseline temperature	Itron weather-adjusted reduction (per-device kW)	EM&V team weather-adjusted reduction (per-device kW)
06/14/2024	17:00	18:00	84.8	84.8	0.7	0.65
06/14/2024	18:00	19:00	83.6	83.6	0.56	0.52
07/31/2024	15:00	16:00	86.5	86.5	0.91	0.84
07/31/2024	16:00	17:00	87.1	87.1	0.67	0.61
07/31/2024	17:00	18:00	86.2	86.2	0.71	0.65
07/31/2024	18:00	19:00	84.7	84.7	0.65	0.59
08/27/2024	**16:00**	**17:00**	**71.9**	**91.9**	**1.09**	**1.05**
08/27/2024	17:00	18:00	71.0	91.0	0.85	0.81
08/27/2024	18:00	19:00	88.6	88.6	0.83	0.79

Savings Calculation

The savings calculation for each event hour is as follows:

kW Savings = Weather Adjusted Baseline kW – Metered Load

Across all the event hours during PY2024, the highest single hour represents the program savings. Itron and the EM&V team determined the highest performing hour to be August 27 from 16:00 to 17:00. The realization rate is 96.7 percent for this hour, with the EM&V team estimating a kilowatt savings of 1.05 per device, and Itron estimating a savings of 1.09 kW per device. Table 211 summarizes each hour's load reduction, with

Table 212 summarizing the corresponding event-hour realization rates, ranging from 91.1 percent to 96.7 percent across events.

Table 211. Residential Direct Load Control—MISO Calculation #3 Results

Date	Start time (CDT)	End time (CDT)	Number of participating devices	Itron per device kW savings	EM&V team per device kW savings	Itron event-hour savings	EM&V team event-hour savings
06/03/2024	13:00	14:00	12,944	-0.21	-0.20	-2,718	-2,590
06/14/2024	15:00	16:00	12,944	0.89	0.83	11,520	10,733

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Date	Start time (CDT)	End time (CDT)	Number of participating devices	Itron per device kW savings	EM&V team per device kW savings	Itron event-hour savings	EM&V team event-hour savings
06/14/2024	16:00	17:00	12,944	0.68	0.63	8,802	8,204
06/14/2024	17:00	18:00	12,944	0.7	0.65	9,061	8,386
06/14/2024	18:00	19:00	12,944	0.56	0.52	7,249	6,697
07/31/2024	15:00	16:00	12,944	0.91	0.84	11,779	10,892
07/31/2024	16:00	17:00	12,944	0.67	0.61	8,672	7,918
07/31/2024	17:00	18:00	12,944	0.71	0.65	9,190	8,467
07/31/2024	18:00	19:00	12,944	0.65	0.59	8,414	7,665
08/27/2024	**16:00**	**17:00**	**12,944**	**1.09**	**1.05**	**14,109**	**13,644**
08/27/2024	17:00	18:00	12,944	0.85	0.81	11,002	10,500
08/27/2024	18:00	19:00	12,944	0.83	0.79	10,744	10,213

Table 212. Residential Direct Load Control—MISO Calculation #3 Realization Rates

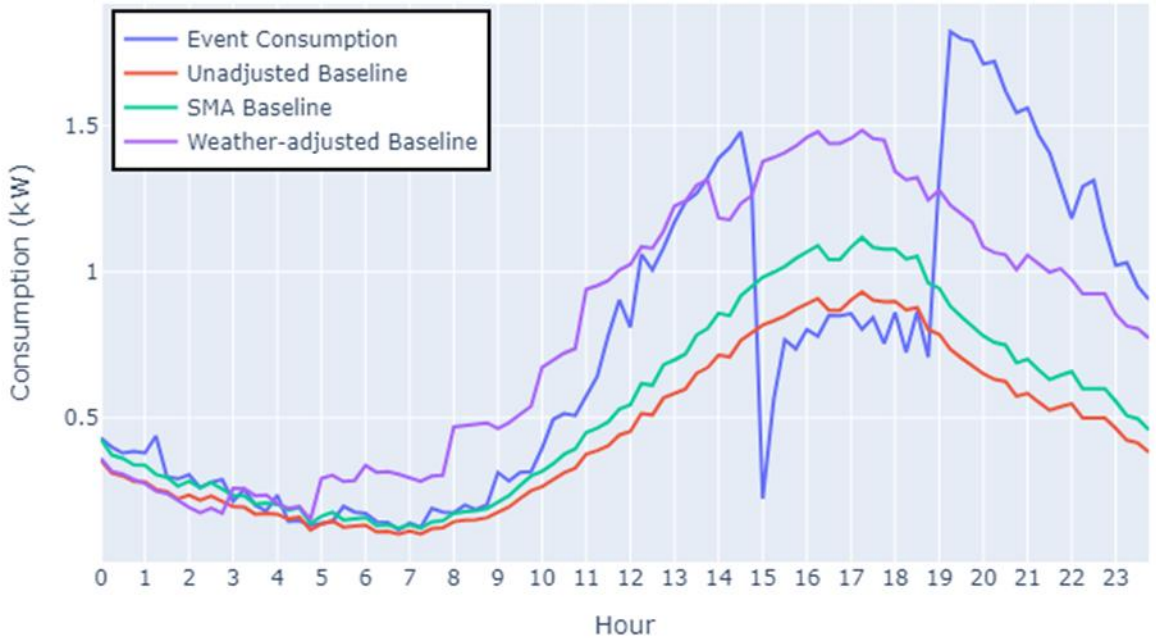
Date	Start time (CDT)	End time (CDT)	Itron event-hour savings (kW)	EM&V team event-hour savings (kW)	Realization rate (%)
06/03/2024	13:00	14:00	-2,718	-2,590	95.3
06/14/2024	15:00	16:00	11,520	10,733	93.2
06/14/2024	16:00	17:00	8,802	8,204	93.2
06/14/2024	17:00	18:00	9,061	8,386	92.6
06/14/2024	18:00	19:00	7,249	6,697	92.4
07/31/2024	15:00	16:00	11,779	10,892	92.5
07/31/2024	16:00	17:00	8,672	7,918	91.3
07/31/2024	17:00	18:00	9,190	8,467	92.1
07/31/2024	18:00	19:00	8,414	7,665	91.1
08/27/2024	**16:00**	**17:00**	**14,109**	**13,644**	**96.7**
08/27/2024	17:00	18:00	11,002	10,500	95.4
08/27/2024	18:00	19:00	10,744	10,213	95.1

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13.4.2 Snapback

Charts for each of the three non-test events demonstrate a large spike in consumption in the hours after the event finishes. Due to this spike, savings that can be attributed to the event are somewhat counteracted by this increase in consumption. Figure 29 shows the snapback effect for the June 14, 2024 event.

Figure 29. Residential Direct Load Control—Snapback Effect for the June 14, 2024 Event



For the three non-test events, the snapback is calculated as the difference between the average consumption during the hour following the event and the average value of the largest baseline. The snapback results and the per-device savings for each event are described in Table 213.

Table 213. Residential Direct Load Control—Estimated Post-Event Snapback

Event date	Snapback start time (CDT)	Snapback end time (CDT)	Per-device snapback effect (kWh)	Evaluated per-device event savings (kWh)	Adjusted per-device event savings (kWh)
06/14/2024	19:00	20:00	0.46	0.83	0.37
07/13/2024	19:00	20:00	0.60	0.84	0.24
08/27/2024	19:00	20:00	0.45	1.05	0.60

13.5 DETAILED PROCESS EVALUATION RESULTS

As part of the PY2024 process evaluation for the program, the EM&V team conducted 70 telephone surveys with current participants. The participant survey investigated participation experiences, decision-making, program satisfaction, and customer demographics.

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13.5.1 Respondent Demographics

Table 214 below summarizes the characteristics of the participants surveyed. The average number of household members is just over two; most participants owned their homes (97 percent), and most respondents were 55 or older (73 percent). Also, over 26 percent of respondents had completed college, and 23 percent had completed at least some post-secondary or technical school education. Over 80 percent of respondents had an annual household income above the federal poverty level based on household size (83 percent).

Table 214. Residential Direct Load Control—Participant Demographics

Respondent characteristic		Mean/percentage
Household size	Mean number of residents	2.2
	Respondents (n)	**68**
Own or rent	Own	97.1%
	Rent	2.9%
	Respondents (n)	**69**
Respondent age	18–24	0.0%
	25–34	2.9%
	35–44	10.3%
	45–54	13.2%
	55–64	10.3%
	65 or older	63.2%
	Respondents (n)	**68**
Respondent highest level of education	Less than high school	2.9%
	High school graduate	10.1%
	Vocational/technical school	5.8%
	Some college	31.9%
	Completed college	26.1%
	Graduate studies or advanced degree	23.2%
	Respondents (n)	**69**
2023 annual household income (relative to FPL and number of household members)	Less than FPL	17.2%
	Greater than FPL	82.8%
	Respondents (n)	**58**

Source: Participant Survey Question D0, D1, D2, D3, D4
**Don't know* and *refused* responses are excluded.

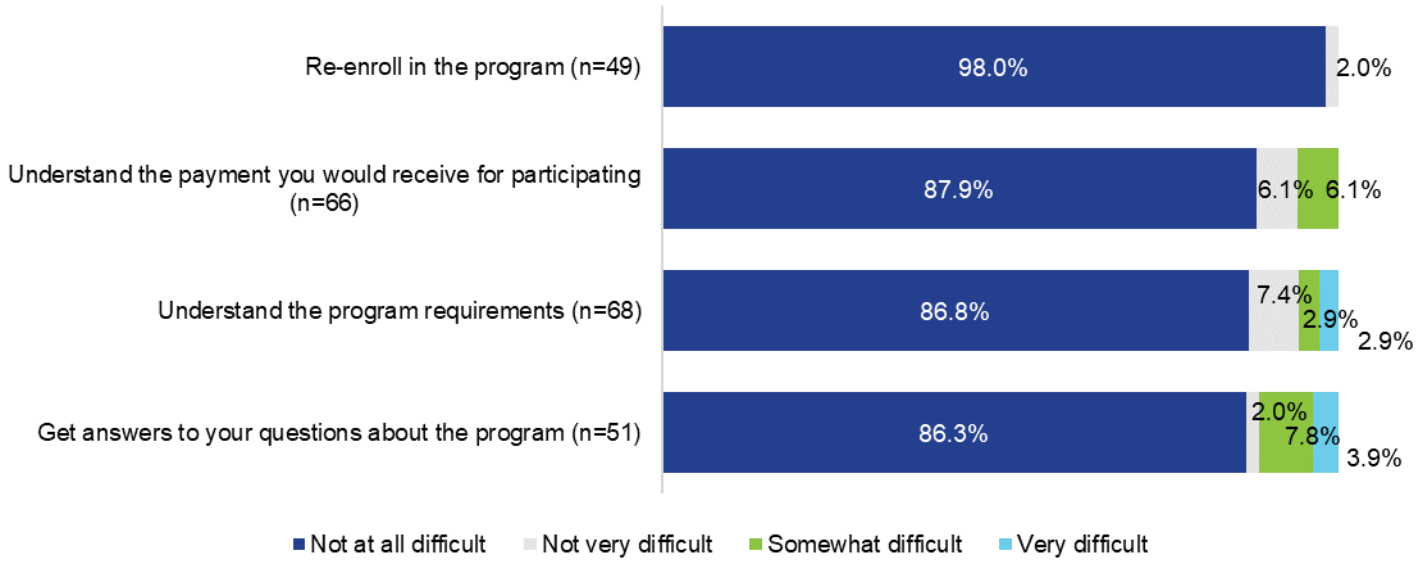
13.5.2 Participant Experience

Overall, almost all respondents deemed participation in the program not difficult. The survey used a scale of *not at all difficult*, *not very difficult*, *somewhat difficult*, or *very difficult*, to ask respondents to rate the difficulty in each of the following program aspects: re-enrolling in the program, understanding

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program requirements, receiving answers to questions, and understanding program incentive payments. As shown in Figure 30, re-enrolling in the program was the easiest, with all respondents rating it as either not at all difficult or not very difficult. Three respondents rated understanding program payments or getting answers to their questions as *very difficult* (two respondents each, with one respondent rating both as *very difficult*).

Figure 30. Residential Direct Load Control—How Participants Rated Their Experience with Various Program Aspects

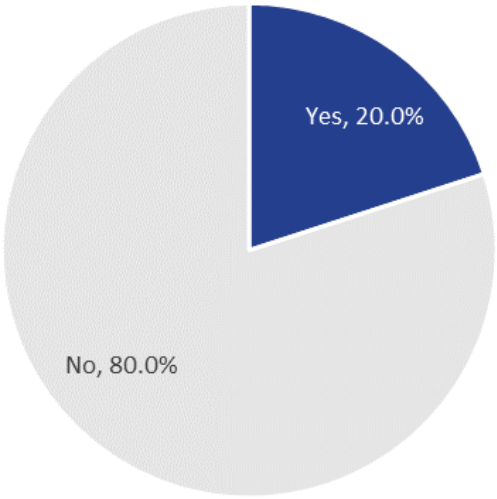


Source: Participant Survey Question P5A, P5C, P5D, P5E
Multiple responses were allowed.
Don't know and *refused* responses were excluded.

Figure 31 shows that 20 percent of survey respondents (14 respondents) said they noticed changes in their home's comfort while participating in the program. Most respondents mentioned they noticed their homes getting warmer. Two respondents noted they would forget they were enrolled in the program until the home got warm, but it was not enough to quit the program. They felt receiving a notification that an event was occurring would be helpful, so they knew it was the program and not a problem with their unit. One respondent felt it got too hot and was not expecting more than a two-degree change.

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Figure 31. Residential Direct Load Control—Noticed Changes to Comfort in the Home as a Result of Participating (n=70)



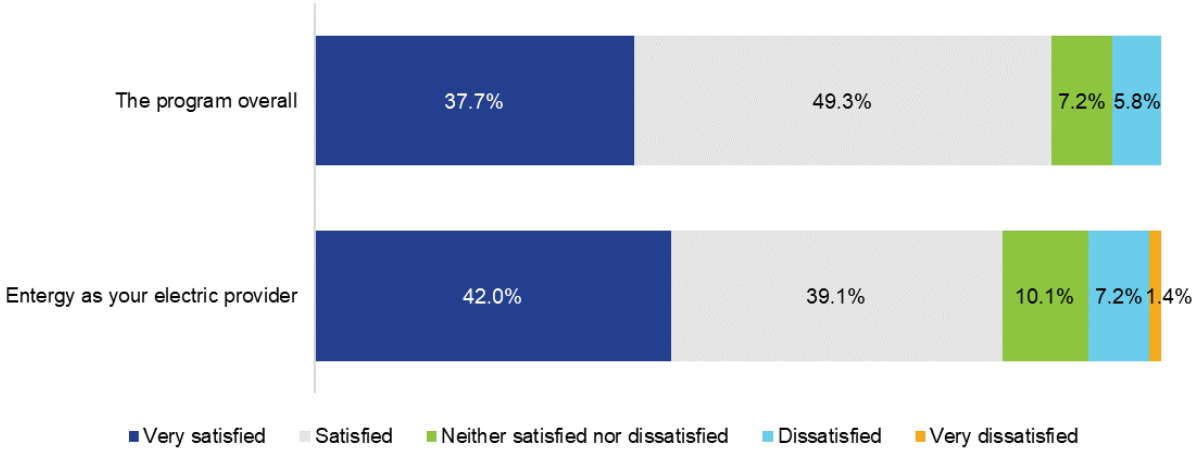
Source: Participant Survey Question P7

13.5.3 Program Satisfaction

Overall, participants rated their satisfaction with the program and EAL as their electricity provider highly, using a scale of *very satisfied*, *satisfied*, *neither satisfied or dissatisfied*, *dissatisfied*, and *very dissatisfied*. Eighty-seven percent and 81 percent said they were *satisfied* or *very satisfied* with the program and EAL, respectively. Over one-third of respondents said they were *very satisfied* with the Residential DLC program overall (42 percent), and an additional 39 percent reported being *satisfied*. Five participants (7 percent) said they were *neutral* about the program, and four reported dissatisfaction. No respondents reported being *very dissatisfied* with the program. Respondents who reported being less than *very satisfied* were asked what EAL could do to improve their program experience. While over two-thirds did not feel anything EAL could do would improve their experience (70 percent), four respondents said they would like additional information or communication about the program. Some have been in the program for a long time and do not remember the details or know if the program has changed over the years. Three respondents mentioned increasing the incentive amount. Of the four dissatisfied respondents, two said there was nothing Entergy could do to improve their program experience. One respondent requested EAL to "provide specific examples on your bill" (unclear what examples should be provided), and one respondent said, "They can make my bill less expensive."

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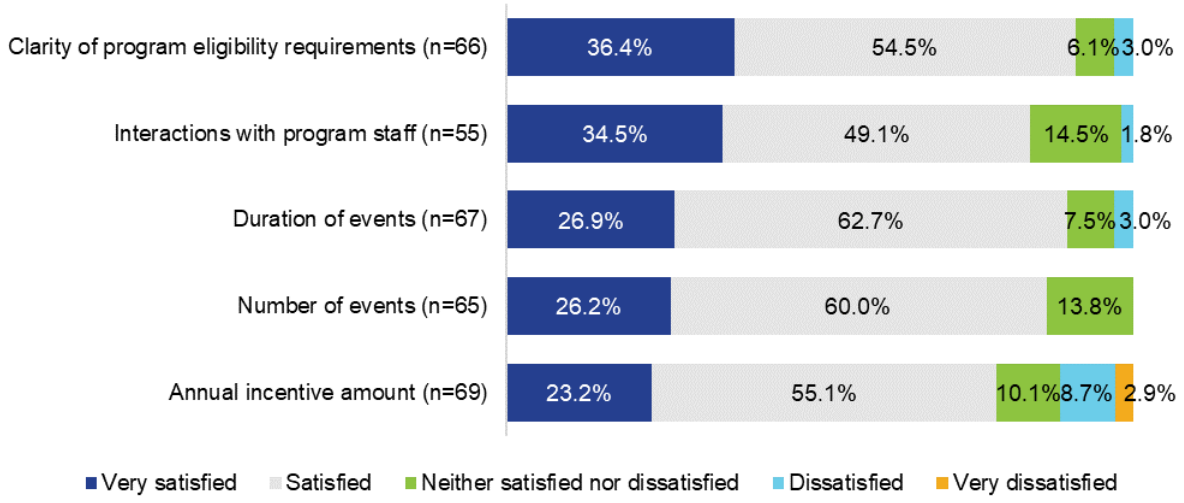
Figure 32. Residential Direct Load Control—Participant Satisfaction with the Program Overall and EAL as an Electric Service Provider (n=69)



Source: Participant Survey Question SAT2, SAT7
* *Don't know*, *not applicable*, and *refused* responses are excluded.

Figure 33 shows the satisfaction ratings of participants' experiences with the program were high across all program aspects. Respondents who said they were *satisfied* or *very satisfied* ranged between 91 percent and 78 percent across all elements. Only two respondents said they were *very dissatisfied* with any aspect—the annual incentive amount. One respondent felt the incentive should be increased, given "as much as we pay."

Figure 33. Residential Direct Load Control—Participant Satisfaction with Program Aspects



Source: Participant Survey Question SAT1
* *Don't know*, *not applicable*, and *refused* responses are excluded.

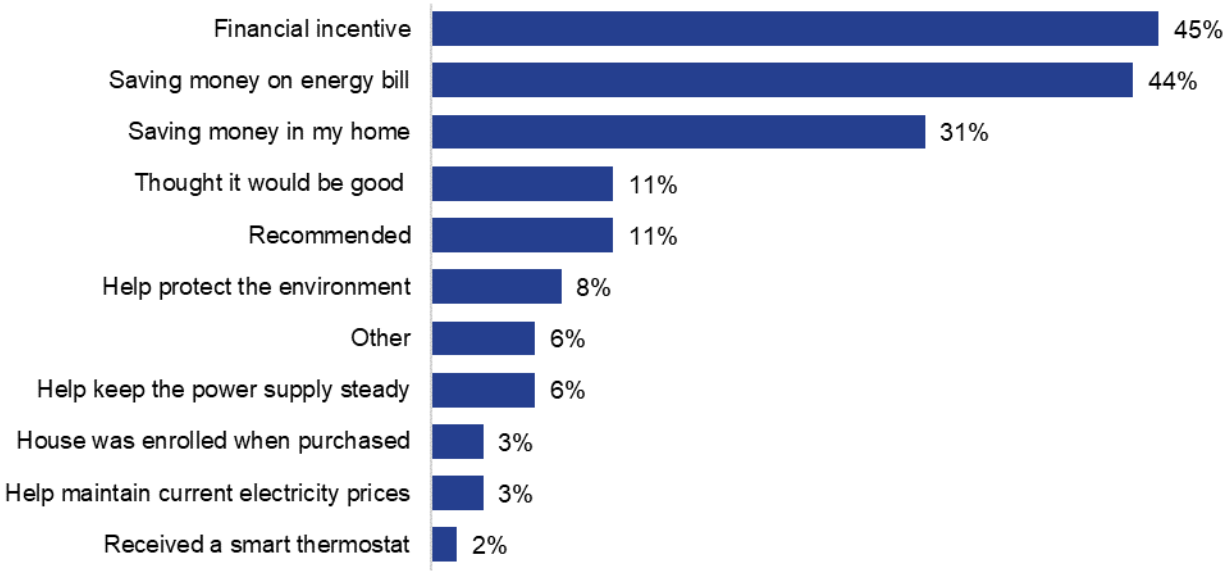
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Most respondents said they would recommend the program to others if given the opportunity. Of those that said no (five respondents), the reasons mentioned were that it got too hot during an event, it was not worth the money, they did not send an alert, they did not know enough about the program to recommend it, and because they were dissatisfied with the program. All but three respondents said they plan to continue participating in the program. One respondent sold their home, one wants to switch to the Smart DLC program and get a new thermostat, and the third, who would not recommend the program and was dissatisfied with the program, said it got too hot and humid in their house. They thought they would see only a two-degree change, but they saw about an eight to ten-degree change.

13.5.4 Decision-Making

The (1) program incentive and (2) saving money on their energy bill were the two most mentioned motivators for participating in the program (45 and 44 percent, respectively). Saving energy in their home was the third most mentioned (31 percent). Eleven percent of respondents said they thought it would be a good program and wanted to try it; another 11 percent said the program was recommended. Figure 34 shows the percentages across additional areas.

Figure 34. Residential Direct Load Control—Motivators for Program Participation (n=62)



Source: Participant Survey Question P1
Multiple responses were allowed.
Don't know and *refused* responses were excluded.

Most respondents said they had no initial concerns about participating in the program (78 percent). The top reasons for concern mentioned were because (1) they did not know how long their air conditioner would be shut down (5 respondents), (2) they were worried it would get too hot (3 respondents), and (3) it was unclear how the program worked (3 respondents).

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Nine respondents said they called the program's toll-free number or visited the website to answer program questions. Five of the nine said their questions were sufficiently answered. When asked what questions went unanswered, responses varied. The specific responses are below:

> *"Questions about saving energy and money."*
>
> *"(1) Disbursement of the checks. (2) If the program is over. (3) Unsure if we get one check or two. Different answers from different folks they talked with."*
>
> *"I never talked to anyone."*
>
> *"(1) How do I unenroll? (2) Why did I not get notifications when these events were happening? (3) Also, I was charged approximately $200 for a service fee to have a repairman fix my unit, because I thought it was broken. It was the program that they were messing with it. I called to get reimbursed for the repair service and I submitted the bill, but never heard back from them."*

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14.0 SMART DIRECT LOAD CONTROL PILOT

The Smart Direct Load Control (SDLC) pilot is a demand response program that controls load through smart thermostats in residential and small nonresidential buildings. The pilot started in 2020 and is implemented by ICF Consulting (ICF), which provides marketing services and a call center and conducts program tracking.

The SDLC pilot program aims to reduce peak kilowatt loads during load control events in the summer months (June 1 through September 30). Participants in the program have smart thermostats and allow Entergy Arkansas, LLC (EAL) to reduce the time an individual air conditioner operates remotely.

Incentives for participation are divided into two payment streams: one for annual enrollment and one based on participation in load-control events. Customers with an existing, qualifying thermostat receive an enrollment incentive of up to $50 (residential) or $100 (nonresidential). In comparison, customers without an existing smart thermostat receive a smart thermostat, including free installation and an annual enrollment incentive of up to $40 (residential) or up to $100 (nonresidential).

Upon completion of the load-control season, customers receive rebates based on participation. If a customer participates in all load-control events (i.e., does not opt out of any events) or opts out of a single event, the customer receives $40 (residential) or $100 (nonresidential). Customers who opt out of two or three events receive $25 (residential) or $50 (nonresidential), and customers who opt out of more than three events receive no annual participation rebate.

In program year (PY) 2024 (PY2024), the SDLC pilot program called four events on four days, spanning June through August 2024. The first event, which occurred on June 3, 2024, was a test event used to verify equipment operability; the remaining events were used to reduce load across EAL's territory.

In support of the impact evaluation, the evaluation, measurement, and verification (EM&V) team calculated energy savings achieved by installing new thermostats and demand savings from load-control events during the 2024 load-control season. The EM&V team deployed three different methods for estimating load reductions, all summarized in the Midcontinent Independent System Operator's (MISO) *Business Practice Manual for Demand Response*[127] (MISO's Business Practice Manual, or MISO BPM). Process evaluation activities included biweekly meetings with implementation and EAL staff for PY2024 and participant surveys to assess program satisfaction and estimate net-to-gross rates. Table 215 details the evaluation activities conducted for the program in PY2024.

Table 215. Smart Direct Load Control Pilot—Data Collection and Program Inputs

Net-to-gross (NTG) approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site M&V	Metered data analysis[128]
PY2024 EM&V participant surveys	Program staff interviews (2) Materials review Participant surveys (128)	Census	None	None	Census

[127] Midcontinent Independent System Operator Demand Response Business Practices Manual. BPM-026-r11. Effective October 1, 2024.

[128] This column refers to EAL customer runtime data provided to the EM&V team as opposed to primary metered data collected as part of the on-site M&V.

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14.1 KEY FINDINGS

In PY2024, the SDLC program achieved 3,802 MWh in gross energy savings and 6.8 MW in gross demand savings, as shown in Table 216. The EM&V team found that energy savings using deemed values in the TRM 9.2 were applied correctly to residential applications. No energy savings were claimed for smart thermostats that received rebates during previous program years. Energy savings among small business participants were accurately calculated, resulting in a realization rate of 100.0 percent for energy savings. The process evaluation indicated that satisfaction among participants was high, with no substantive concerns about the events. Almost all respondents said they planned to continue their participation in the program. The program met 76 percent of the energy savings goal and 50 percent of the demand goal, as detailed in Table 217.

Table 216. Smart Direct Load Control Pilot—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio*	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	3,802	3,803	100.0%	87.8.%	3,341	1.3%
Demand savings (MW)	9.1	6.8	74.5%	100.0%	6.8	8.4%

*The PY2024 NTG ratio uses a weighted average of residential and commercial *smart thermostats* for energy savings based on survey data collected in 2024.

Table 217. Smart Direct Load Control Pilot—Goals vs. Achieved

Savings	Goal	Actual	Percentage achieved
Energy savings (MWh)	4,385	3,341	76.2%
Demand savings (MW)	13.7	6.8	49.3%

14.2 RECOMMENDATIONS

The EM&V team identified one recommendation for EAL's consideration through the evaluation process, presented in Table 218.

Table 218. Smart Direct Load Control Pilot—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Develop a method to identify unenrolled thermostats in tracking data	Identifying thermostats that unenrolled from the program ensures that demand response savings estimates are as accurate as possible, eliminating the possibility of penalizing the unenrolled thermostats as non-compliant.

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Table 219. Smart Direct Load Control Pilot—Status of Prior Year Recommendations

Status of prior year recommendations	
BY2023 impact recommendations	• Collaborate with the EM&V team to update energy savings for *commercial smart thermostats*. ○ In progress.
BY2023 process recommendations	• Continue to investigate opportunities to increase program participation in small business segments as well as residential to improve the underperformance of this pilot in relation to planning estimates. ○ Continuing.

14.3 METHODOLOGY

The following sections present an overview of the impact, process, and net-to-gross evaluation methodologies.

14.3.1 Impact Evaluation

The evaluated savings results are based on savings calculations made during the tracking system review, using deemed savings values in TRM 9.2 and characteristics of each participant's heating system, square footage, and previous thermostat. *Commercial thermostats* applied a deemed savings value per ton of cooling capacity, an average value based on past evaluations of *commercial smart thermostats*.

Estimates of demand savings used air conditioner runtime data from participating thermostats during the control season and deployed three evaluation methods defined in MISO's BPM.

14.3.1.1 Tracking System Review

The EM&V team reviewed all program-reported tracking data to assess whether it provided the algorithms and ex-ante values necessary for each measure. The tracking system data review referenced TRM 9.2 for savings assumptions; the EM&V team checked the tracking systems' linkage to TRM deemed savings and methods used to estimate savings.

Our review accomplished three primary objectives: (1) identify initial high-level tracking system concerns, (2) verify whether the savings estimates in the tracking system are consistent with the savings algorithms' results as outlined in TRM 9.2, and (3) assess the tracking system's ability to support quality assurance and quality control (QA/QC) activities, including future evaluation needs.

Participants in the SDLC pilot program come from several distinct channels. The most direct participation route is through the SDLC pilot program web portal. Participants can choose between self-installation or direct installation of their thermostat by a trade ally. Customers with an existing smart thermostat that was *not* rebated or provided through an EAL energy efficiency program can also enroll the thermostat to participate in demand response events through the SDLC pilot program portal. Additional participants come from other residential energy efficiency programs provided by EAL and participate in programs that no longer exist in EAL's portfolio. It is important to note that energy savings are only claimed for new participants who receive a rebated smart thermostat (i.e., only new SDLC pilot program participants who did not have a smart thermostat before enrollment). Regardless of installation or registration method, all thermostats provide demand savings through participation in demand response events.

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14.3.1.2 Residential Participants

The EM&V team used Section 2.1.12 of TRM 9.2 to calculate savings for *smart thermostats* installed for residential customers. Table 220[129] provides the kilowatt-hour savings per square foot of conditioned space for *smart thermostats* installed residentially.

Table 220. Smart Direct Load Control Pilot—Smart Thermostats—Deemed Savings Value per Square Foot of Conditioned Space

Baseline	Electric cooling (kWh/ft²)	Electric resistance heat (kWh/ft²)	Electric HP heating (kWh/ft²)
Manual thermostat	0.450	0.845	0.395
Programmable thermostat	0.113	0.212	0.099
Default	**0.399**	**0.750**	**0.351**

The EM&V team calculated savings for each new *residential smart thermostat* rebated through the SDLC pilot program using Equation 1, using the square footage of each site's conditioned space and the appropriate energy savings factor from Table 220 to estimate energy savings.

Equation 1. Smart Thermostat Energy Savings (Residential)

$$kWh_{i,b,h} = \left(\frac{kWh_{b,h}}{ft^2}\right) \times ft_i^2$$

Where:

$kWh_{i,b,h}$ is the savings of household *i* with baseline thermostat *b* and heating type *h*

$\frac{kWh_{b,h}}{ft^2}$ is the savings of baseline thermostat *b* and heating type *h*

ft_i^2 is the square footage of household *i*.

Most *residential smart thermostats* were in homes with *air conditioning* and *gas heat*, and 35 percent of participants had *heat pumps*. Table 221 provides full results while Table 222 details the types of thermostats customers had before installing their new *smart thermostats*.

Table 221. Smart Direct Load Control Pilot—Distribution of Heating Type (Residential)

Heating	Unique devices	Percentage
AC with resistance heat	226	10.9%
AC with gas heat	1,130	54.2%
Heat pump	728	35.0%
Total	**2,084**	**100.0%**

[129] Reproduced from Table 70, Page 81, Volume 2, TRM 9.2.

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Table 222. Smart Direct Load Control Pilot—Type of Thermostat Removed (Residential)

Type of thermostat removed	Unique devices	Percentage
Manual	2,061	98.9%
Programmable	22	1.1%
Unknown	1	0.1%
Total	**2,084**	**100.0%**

Using participants' square footage, previous thermostat type, heating type, and participation method, the EM&V team estimated energy savings for residential smart thermostat installation in PY2024. As noted above, participants who enrolled in the SDLC pilot's demand response portion after receiving a smart thermostat from another EAL program or participants who enrolled a previously purchased (non-rebated) device produced no energy savings for the SDLC pilot program.

Energy savings only apply to customers who enrolled through the SDLC pilot portal, received a rebated smart thermostat, and either self-installed it or had it installed by a trade ally.

The SDLC pilot program saved 2,179,418 kWh in PY2024 residential installations, resulting in a 100.0 percent realization rate. Net savings, which applied an NTG ratio of 97.4 percent,[130] were 2,122,753 kWh.

14.3.1.3 Commercial Participants

In PY2024, the SDLC pilot program rebated 529 smart thermostats. Energy savings for smart thermostats installed in *commercial buildings* used an energy savings factor of 819 kWh/ton of cooling capacity, as shown in Equation 2.

Equation 2. Smart Thermostat Energy Savings (Commercial)

$$kWh_i = tonnage_i \times \left(819 \frac{kWh}{ton}\right)$$

Table 223 summarizes the distribution of air conditioner and heat pump cooling capacities for PY2024 SDLC pilot program commercial participants. Over 50 percent of commercial smart thermostats are connected to HVAC units under four tons; an additional 47 percent of commercially installed smart thermostats connect to HVACs with four to six tons of capacity. However, some larger units also participated in the pilot.

Table 223. Smart Direct Load Control Pilot—Commercial Cooling Tonnage (SDLC)

Cooling capacity (tons)	Count	Percentage	Cumulative percentage
< 2 tons	17	3.2%	3.2%
≥ 2 tons and < 3 tons	118	22.3%	25.5%
≥ 3 tons and < 4 tons	131	24.8%	50.3%

[130] Based on primary NTG research conducted in PY2024 for residential smart thermostats in SDLC pilot program.

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Cooling capacity (tons)	Count	Percentage	Cumulative percentage
≥ 4 tons and < 5 tons	77	14.6%	64.8%
≥ 5 tons and < 6 tons	170	32.1%	97.0%
≥ 6 tons and < 7 tons	2	0.4%	97.4%
≥ 7 tons and < 8 tons	9	1.7%	99.1%
≥ 8 tons and < 9 tons	0	0.0%	99.1%
≥ 9 tons and < 10 tons	0	0.0%	99.1%
≥ 10 tons and < 11 tons	4	0.8%	99.8%
11+ tons	1	0.2%	100.0%
Total	**529**	**100.0%**	**100.0%**

After applying the energy savings factor of 819 kWh/ton of capacity, the EM&V team estimated 1,623,668 kWh in energy savings achieved through installing smart thermostats in commercial buildings in PY2024. These findings were marginally higher than the reported savings of 1,622,506 kWh, resulting in a realization rate of 100.1 percent among commercial installations. The difference in savings came from a single project involving a three-ton air conditioner; the project claimed 1,295 kWh, whereas the EM&V team estimated energy savings of 2,457 kWh. Based on primary data collected in PY2024, the NTG ratio for commercial thermostats was 75.0 percent,[131] resulting in net savings of 1,217,751 kWh.

14.3.2 Demand Response

Tetra Tech received five-minute HVAC runtime data for SDLC participants spanning the load control season. Opt-outs were removed from the data for each event, and unenrolled devices were removed from the analysis file. In PY2024, EAL called four events that spanned seven total hours, including a test event on June 3. Table 224 summarizes called events during PY2024. The total number of participating thermostats for each event is calculated as the total number of thermostats curtailed after removing thermostats that opted out of the event.

Table 224. Smart Direct Load Control Pilot—PY2024 Load Control Events

Date	Start time (CST)	End time (CST)	Residential thermostats	Commercial thermostats	Unclassified thermostats*	Total participating thermostats	Event type
06/03/2024	13:00	14:00	6,852	2,594	99	9,545	Test event
06/14/2024	16:00	18:00	6,618	2,619	91	9,328	Normal event
07/31/2024	16:00	18:00	6,918	2,489	37	9,444	Normal event
08/27/2024	16:00	18:00	6,944	2,694	13	9,651	Normal event

*Thermostats without residential/commercial status in tracking data

[131] Based on primary NTG research conducted in PY2024 for commercial smart thermostats in SDLC pilot program.

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To aid in determining thermostats that opted out of the event, Tetra Tech received data on each thermostat for each curtailment. The data determined whether a thermostat was eligible, called for curtailment, selected while online, and whether it opted out. Table 225 provides a summary of the curtailment data for each event.

Table 225. Smart Direct Load Control Pilot—PY2024 Curtailment and Opt-Outs

Date	Eligible for curtailment	Called for curtailment	Selected while online	Opted out	Participating thermostats[132]
06/03/2024	11,533	9,743	9,730	198	9,545
06/14/2024	11,737	9,929	9,919	599	9,328
07/31/2024	11,964	9,990	9,974	544	9,444
08/27/2024	11,819	10,303	10,292	652	9,651

Savings are based on runtime data for each event. Depending on the calculation method, the baseline is constructed using ten eligible days before the event and applying no adjustment (MISO Calculation #1), a symmetrical multiplicative adjustment (MISO Calculation #2), or a weather-based adjustment (MISO Calculation #3). These are described in more detail below.

14.3.2.1 MISO Calculation Evaluation Methodology

The EM&V team evaluated SDLC runtime data using three calculation options detailed in MISO's BPM.

14.3.2.2 MISO Calculation #1–Unadjusted Baseline

MISO's unadjusted baseline calculation approach utilizes the ten most recent eligible days (non-holiday, non-event weekdays) before the event. The average load for each hour is calculated by averaging the five-minute kilowatt load intervals recorded for each thermostat. A total load is calculated for participating thermostats for that interval. For a given hour, the total load is averaged across the ten days to represent the unadjusted baseline load.

14.3.2.3 MISO Calculation #2–Symmetrical Multiplicative-Adjusted Baseline

MISO's symmetrical multiplicative-adjusted baseline modifies the unadjusted baseline load schedule to represent actual event-day loads. Adjustment is conducted to generate a more accurate counterfactual baseline load to represent what would have occurred on an event day without an SDLC event. The adjustment factor uses pre-event loads during baseline and event days to inform the degree of adjustment required. If pre-event loads on event days exceed baseline loads, baseline loads will be scaled upwards. If pre-event loads on event days are less than baseline loads, baseline loads will be scaled downwards. The multiplicative adjustment procedure is as follows:

1. Extract three hours of pre-event loads beginning four hours before the start of the event from both the unadjusted baseline load and the event-day load. For example, for an event starting at 14:00, extract unadjusted baseline and event-day loads for three hours spanning 10:00 to 13:00.

[132] Only thermostats that were both called for curtailment and did not opt-out are counted here.

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2. Calculate the *symmetrical multiplicative adjustment factor* by taking the ratio of (1) the sum of the three hours of event-day loads and (2) the sum of three hours of unadjusted baseline loads. This adjustment factor may not adjust the baseline by more than 20 percent in either direction. If the multiplicative adjustment exceeds 1.2, then set the multiplicative adjustment to 1.2. If the multiplicative adjustment is less than 0.8, set the multiplicative adjustment to 0.8.
3. Calculate the *symmetrical multiplicative-adjusted baseline* by multiplying the unadjusted baseline load by the *symmetrical multiplicative adjustment factor*.

14.3.2.4 MISO Calculation #3–Weather-Adjusted Baseline

MISO's weather-adjusted approach to baseline calculations incorporates an unadjusted baseline with a factor describing how temperature affects non-event loads. Adjustment is conducted to generate a more accurate counterfactual baseline load to represent what would have occurred on an event day without an SDLC event. Instead of using pre-event loads to determine the adjustment to baseline loads, the sensitivity of loads to temperature changes is used to predict what loads would have been in the absence of an event. The procedure is as follows:

1. Determine the *change in loads* relative to a change in temperature (the temperature adjustment, expressed in kilowatt per degree Fahrenheit) using data from eligible non-event, non-holiday weekdays.
2. Determine the *average temperature* during baseline days' hours corresponding to each hour of an event. These baseline days are the same ten prior non-event, non-holiday weekdays used to calculate the *unadjusted baseline load*.
3. Calculate the *difference in temperature* between (1) the average of the baseline days' hours corresponding to the event hours and (2) the actual temperatures recorded during the event's hours.
4. Calculate the *weather adjustment factor* by multiplying the temperature difference by the temperature adjustment.
5. Calculate the *weather-adjusted baseline* by adding the *weather adjustment factor* to the *unadjusted baseline load.*

The EM&V team used two models to estimate weather-adjusted load reductions. The first used only average hourly temperature, while the second used a lagged temperature to simulate the delay between a change in exterior temperature and air conditioning usage. Ultimately, the model with the lagged temperature outperformed the model that only incorporated exterior temperature.[133]

14.3.3 Process Evaluation

Process evaluation results are based on primary data collected from surveys with program participants.

[133] All weather data for the SDLC evaluation are from Bill and Hillary Clinton National Airport (KLIT).

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14.3.3.1 Participant Survey

The participant survey was used to inform the process evaluations based on the Arkansas TRM Volume 9.2 EM&V Protocols' guidance. Specifically, the participant survey investigated sources of awareness and preferred methods of communication, participation experiences, program satisfaction, and demographics. The survey also collected information to support the NTG analysis for the smart thermostats received as part of program participation.

14.3.3.1.1 Sampling Methodology

The sample frame for the Smart DLC participants consisted of program participants who participated in the 2024 curtailment season. Tetra Tech downloaded a list of program participants in 2023 and 2024 from ArchEE. These lists included both commercial and residential participants who received a thermostat during the program year and participants with thermostats from previous years who were already signed up for the program. Each record corresponds to one thermostat installed in a residential or commercial location or participated in events throughout the season. A record was excluded from the sample if the associated thermostat did not participate in the 2024 curtailment season. The remaining records were then grouped to the account level for sampling. Table 226 summarizes the number of records dropped from the final survey sample frame for various reasons.

Table 226. Smart Direct Load Control Pilot—Participant Survey Sample Frame Summary

Status	BY23		PY24		Total	
	Number of records	Number of accounts	Number of records	Number of accounts	Number of records	Number of accounts
Original ArchEE download	14,265	6,183	5,335	2,440	19,600	8,623
Did not participate in 2024 – excluded	2,420	1,105	861	396	3,281	1,501
Accounts in BY23 also included in PY24 – combined into PY24	0	5	N/A	N/A	0	5
Final survey sample frame	**11,845**	**5,073**	**4,474**	**2,044**	**16,319**	**7,117**

The survey sample was stratified by whether customers were commercial or residential, and then residential customers were further stratified by the method by which the smart thermostat was obtained. We conducted a census of commercial participants, expecting to complete 50 surveys. The residential participants were sampled using a simple random sample with a target of 100 completed surveys: 70 participants who had a thermostat installed through the program in the last two years and 30 participants who did not. Table 227 outlines the sample and the targeted completions.

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Table 227. Smart Direct Load Control Pilot—Participant Survey Sample Plan

Stratum	Count in sample frame	Starting sample*	Target survey completions
Commercial participant	189	189	50
Residential participant – program-installed thermostat in 2023 or 2024	2,276	280	70
Residential participant – thermostat not installed by program in 2023 or 2024	4,652	120	30
Total	**7,117**	**589**	**150**

*Based on an assumed 25 percent response rate.

The participant survey was implemented via a web survey through the EM&V team's in-house Survey Research Center (SRC). Initial email invitations were sent on December 27, 2024, and the field period closed on January 20, 2025. A phone effort was used between January 16 and 20 to gain additional commercial completes. Respondents received a $10 electronic gift card after completing the survey.

The EM&V team's in-house SRC completed a total of 128 surveys. The survey length averaged 8 minutes. Table 228 shows the participant survey response rate by commercial, residential self-installed, and residential program-installed participants.

Table 228. Smart Direct Load Control Pilot—Participant Survey Response Rate

Disposition	Commercial	Residential self-install	Residential program install	Overall
Sample	**168**	**206**	**365**	**739**
Not a utility customer	0	0	0	0
Eligible sample	**168**	**206**	**365**	**739**
Screened out	1	0	0	1
Incompletes (partial surveys)	49	5	14	68
Not completed	79	171	292	542
Completed	**39**	**30**	**59**	**128**
Response rate				
Response rate (completed/eligible sample)	**23.2%**	**14.6%**	**16.2%**	**17.3%**

14.3.4 Net-to-Gross Approach

The participant survey also informed the net-to-gross (NTG) based on the Arkansas TRM Version 9.2 EM&V Protocols guidance. Specifically, the participant survey will include questions to estimate free-ridership and participant spillover to inform NTG of the smart thermostats received through the Smart DLC program.

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As the Arkansas TRM does not allow for partial free-riders, respondents were classified as full-free-riders (100 percent free-ridership) or non-free-riders (0 percent free-ridership) based on their responses to key decision-making questions. To be classified as a full-free-rider, respondents must indicate all of the following conditions; any respondent that does not meet all three of these conditions is classified as a non-free-rider:

- they were already planning to purchase and install a smart thermostat in the same year before learning about the program (FR3 = 1),
- their budget would have accommodated the full cost of the smart thermostat in the absence of the program incentive (FR4 = 1),
- they would have purchased a basic smart thermostat or upgraded smart thermostat model within one year in the absence of the program ((FR5 = 1 OR (FR7 = 1 OR 2)) AND (FR8 = 1 OR 2)).

The participant survey asked about recent purchases of additional energy-efficient equipment made without financial assistance from EAL since program participation to determine participant spillover. We used a conservative approach and quantified only spillover for measures eligible for residential EAL incentives.

Free-ridership and spillover rates were assessed for each respondent at the measure category level. Individual free-ridership and spillover rates were then weighted to adjust for proportional sampling differences, non-response, and gross savings to calculate overall estimates representative of the program population.

14.4 DETAILED IMPACT EVALUATION RESULTS

14.4.1 Evaluated Kilowatt-Hour Savings Results

Applying the deemed savings methodology to residential smart thermostats detailed in Table 70 of Section 2.1.12 of TRM 9.2 resulted in gross savings of 2,179,418 kWh in PY2024 and a 100.0 percent realization rate. Net savings, which applied an NTG ratio of 97.4 percent,[134] totaled 2,122,753 kWh.

Among commercial installations, the EM&V team estimated 1,623,668 kWh in gross energy savings after applying the energy savings factor of 819 kWh/ton of capacity. These findings were very close to reported savings, resulting in a realization rate of 100.1 percent. After applying the NTG ratio of 75.0 percent[135] for commercial thermostats, net savings totaled 1,217,751 kWh.

Combining the residential and commercial energy savings achieved through the SDLC program in PY2024 resulted in gross energy savings of 3,803,086 kWh, with a corresponding realization rate of 100.0 percent. Based on NTG rates of 97.4 percent for residential smart thermostats and 75.0 percent for commercial smart thermostats, net savings were estimated at 3,340,504 kWh in PY2024. Table 229 details savings for the SDLC pilot program in PY2024.

[134] Based on primary NTG research conducted in BY2024 for *residential smart thermostats* in the SDLC pilot program.
[135] Based on primary NTG research conducted in PY2024 for *commercial smart thermostats* in the SDLC pilot program.

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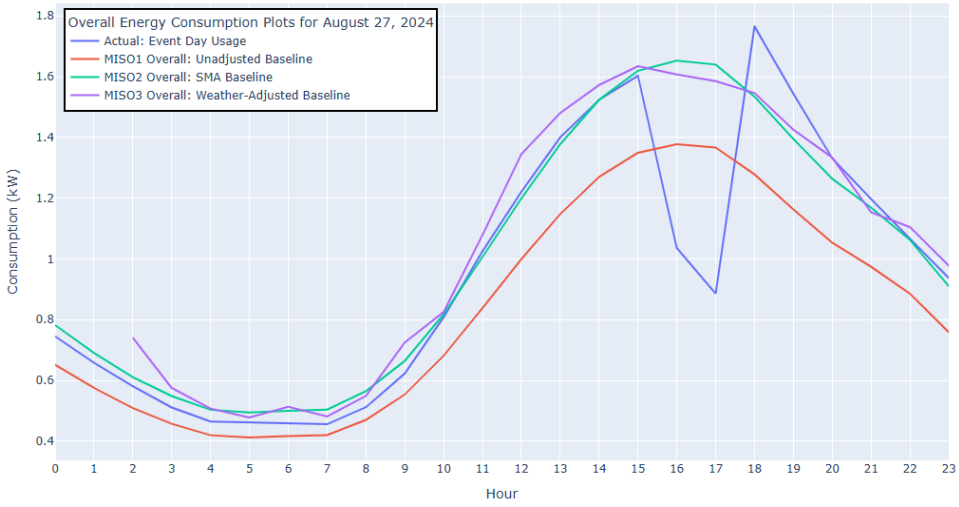
Table 229. Smart Direct Load Control Pilot—Final Evaluated Energy Savings

Sector	Participants	Device count	Reported savings (kWh)	Evaluated savings (kWh)	Realization rate	NTG ratio	Net savings
Residential	1,806	2,075	2,179,418	2,179,418	100.0%	97.4%	2,122,753
Commercial	168	530	1,622,506	1,623,668	100.1%	75.0%	1,217,751
Total	**1,974**	**2,605**	**3,801,924**	**3,803,086**	**100.0%**	**87.8%**	**3,340,504**

14.4.2 Evaluated Kilowatt Savings Results (MISO Calculations)

In support of the SDLC evaluation, the EM&V team received five-minute HVAC runtime data from ICF for event days and the periods preceding each event day. After removing opt-outs from each respective event (and pre-event baseline period), the EM&V team aggregated data to hourly records by thermostat; this allowed for straightforward estimation of demand reductions using each of the three MISO calculation methods. The EM&V team's final estimated demand reduction total of 6.75 MW occurred during the August 27, 2024, event using MISO Calculation #3 (weather-adjusted baseline). The opinion of the EM&V team is that the weather-adjusted baseline methodology provides the best estimation of counterfactual events, as it incorporates historical loads from days immediately preceding an event and the important interaction between observed load and observed temperature. Figure 35 shows the demand levels for all participants on August 27, 2024, displaying actual usage and baselines using each MISO method.

Figure 35. Smart Direct Load Control Pilot—Demand (kW) Plots for August 27 (All Thermostats)



MISO Calculation #1—Unadjusted Baseline

All MISO Calculation methods require the selection of baseline days. The *MISO BPM* method stipulates that the ten prior non-event, non-holiday weekdays are selected to represent the baseline. The average load during those baseline days is calculated for a given event hour, representing an unadjusted baseline. Table 230 below highlights the unadjusted baseline calculations undertaken by the EM&V team.

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Table 230. Smart Direct Load Control Pilot—MISO Calculation #1
MISO Unadjusted Baseline Calculations

Date	Start time (CST)	End time (CST)	kW per Device		
			Residential baseline	Commercial baseline	Overall baseline
6/3/2024	13:00	14:00	0.72	0.77	0.73
6/14/2024	16:00	17:00	1.04	0.76	0.96
6/14/2024	17:00	18:00	1.09	0.65	0.97
7/31/2024	16:00	17:00	1.25	0.96	1.18
7/31/2024	17:00	18:00	1.31	0.86	1.19
8/27/2024	16:00	17:00	1.48	1.12	1.38
8/27/2024	17:00	18:00	1.51	1.00	1.37

MISO Calculation #2—Symmetrical Multiplicative-Adjusted Baseline

MISO's *symmetrical multiplicative-adjusted baseline* modifies the unadjusted baseline load schedule calculated above to be more representative of actual event-day loads. Adjustment is conducted to generate a more accurate counterfactual baseline load to represent what would have occurred on an event day without an event. The adjustment factor uses pre-event loads during baseline and event days to inform the degree of adjustment required. If pre-event loads on event days exceed baseline loads, baseline loads will be scaled upwards. If pre-event loads on event days are less than baseline loads, baseline loads will be scaled downwards. The multiplicative adjustment procedure is as follows:

1. Extract three hours of pre-event loads beginning four hours before the event's start from both the unadjusted baseline load and the event-day load.
2. Calculate the *symmetrical multiplicative adjustment factor* by taking the ratio of (1) the sum of the three hours of event-day loads and (2) the sum of three hours of unadjusted baseline loads.
3. Calculate the *symmetrical multiplicative-adjusted baseline* by multiplying the unadjusted baseline load by the *symmetrical multiplicative adjustment factor*.

The MISO BPM requires that the *symmetrical multiplicative adjustment* not lead to an adjustment greater than ±20 percent of the unadjusted baseline load. The symmetrical multiplicative adjustments are outlined in Table 231.

Table 231. Smart Direct Load Control Pilot—Symmetrical Multiplicative Adjustment Factor by Event Date and Sector

Date	Symmetrical multiplicative adjustment factor		
	Residential	Commercial	Overall
6/3/2024	1.00	1.03	1.01
6/14/2024	1.20	1.20	1.20
7/31/2024	1.20	1.20	1.20
8/27/2024	1.20	1.17	1.20

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Savings Calculation

The savings calculation for each event hour is as follows:

kW Savings = Symmetrical Multiplicative Adjusted Baseline kW – Observed Load

Table 232 details each event-hour's adjusted baseline and SMA reductions for all sectors, while Table 233 summarizes each event-hour's load reduction across residential, commercial, and all participants.

Table 232. Smart Direct Load Control Pilot—MISO Calculation #2—MISO Adjusted Baseline and Per-Device Savings

Date	Start time (CST)	End time (CST)	Residential		Commercial		Overall	
			Adjusted baseline	SMA adjusted reduction (per device kW)	Adjusted baseline	SMA adjusted reduction (per device kW)	Adjusted baseline	SMA adjusted reduction (per device kW)
6/3/2024	13:00	14:00	0.72	0.61	0.79	0.52	0.74	0.59
6/14/2024	16:00	17:00	1.25	0.01	0.91	0.12	1.15	0.04
6/14/2024	17:00	18:00	1.31	0.15	0.78	0.15	1.16	0.15
7/31/2024	16:00	17:00	1.51	0.07	1.15	0.04	1.41	0.06
7/31/2024	17:00	18:00	1.57	0.21	1.03	0.12	1.43	0.19
8/27/2024	16:00	17:00	1.77	0.69	1.31	0.40	1.65	0.62
8 /27/2024	17:00	18:00	1.81	0.84	1.16	0.50	1.64	0.75

Table 233. Smart Direct Load Control Pilot—MISO Calculation #2 Overall Results

Date	Start time (CDT)	End time (CDT)	Number of participating devices	Per device kW savings	Event-hour savings (kW)
6/3/2024	13:00	14:00	9,545	0.59	5,607.2
6/14/2024	16:00	17:00	9,328	0.04	348.7
6/14/2024	17:00	18:00	9,328	0.15	1,407.9
7/31/2024	16:00	17:00	9,444	0.06	589.9
7/31/2024	17:00	18:00	9,444	0.19	1,763.7
8/27/2024	16:00	17:00	9,651	0.62	5,954.9
8/27/2024	**17:00**	**18:00**	**9,651**	**0.75**	**7,277.4**

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MISO Calculation #3—Weather-Adjusted Baseline

All MISO Calculation methods require the selection of baseline days. The *MISO BPM* method stipulates that the ten prior non-event, event-eligible days are selected to represent the baseline. The average load during those baseline days is calculated for a given event hour, representing an unadjusted baseline. Next, the average temperature for that same hour on the baseline days is calculated. The temperature is shifted by two hours to account for the lag between the temperature and the consumption rising. That temperature is then subtracted from the average baseline days' temperature for that same shifted hour to determine the temperature differential between the baseline and event days' temperatures. The temperature coefficient is multiplied by the temperature difference to calculate an additive kilowatt adjustment to the unadjusted baseline kilowatts.

Tetra Tech created a model that incorporated the effect of weather on load, developing a regression equation that explained air temperatures' influence on the resulting load for each event. Five-minute load data were aggregated to create average hourly loads covering the ten eligible baseline days before each event. Event days, holidays, and weekends were excluded from the temperature adjustment analysis. The result is a dataset of the average load for each hour on eligible baseline days.

The resulting regression analysis explored the equation:

Equation 3. Modeling Demand as a Function of Temperature

$$kW_t = \alpha + \beta * (Temperature)_{t-2} + e_t$$

Equation 3 estimates the effect to which load during a given hour (*t*) can be primarily explained by the dry-bulb air temperature two hours prior (*t-2*). Different values for the number of hours to lag the temperature were explored, with a lag of two hours producing the most accurate regression. The resulting regression, run for each event, produced coefficients that were then applied to observed conditions during each event hour to estimate the counterfactual demand that would have occurred in lieu of the load control event.

Table 234. Smart Direct Load Control Pilot—Weather-Adjusted Regression Output by Event Day

Date	Start time (CST)	End time (CST)	kW per degree Fahrenheit	Adjusted R^2 value
6/3/2024	13:00	14:00	0.040	0.859
6/14/2024	16:00	18:00	0.041	0.862
7/31/2024	16:00	18:00	0.055	0.919
8/27/2024	16:00	18:00	0.044	0.950

Savings Calculation

The savings calculation for each event hour is as follows:

kW Savings = Weather Adjusted Baseline kW – Observed Load

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Table 235 provides the lagged temperature for both the baseline days and the event day. The table also shows the new weather-adjusted baseline and the calculated per-device savings for residential participants.

Table 235. Smart Direct Load Control Pilot—MISO Calculation #3 Adjusted Baseline and Per-Device Savings Residential Accounts

Date	Start time (CST)	End time (CST)	Unadjusted Baseline (kW per device)	Baseline Temperature (Two-hour lag, °F)	Event Temperature (Two-hour lag, °F)	Weather-adjusted Baseline (kW per device)	Per device savings (kW)
6/3/2024	13:00	14:00	0.72	81.9	72.0	0.27	0.17
6/14/2024	16:00	17:00	1.04	84.6	93.0	1.45	0.20
6/14/2024	17:00	18:00	1.09	85.1	95.0	1.57	0.41
7/31/2024	16:00	17:00	1.25	86.1	95.0	1.81	0.38
7/31/2024	17:00	18:00	1.31	86.5	95.0	1.84	0.48
8/27/2024	16:00	18:00	1.47	92.8	98.0	1.74	0.66
8/27/2024	17:00	18:00	1.51	93.0	98.0	1.76	0.79

Table 236 summarizes each hour's load reduction, with the final evaluated load reduction in **bold**.

Table 236. Smart Direct Load Control Pilot—MISO Calculation #3 Results Residential Accounts

Date	Start time (CST)	End time (CST)	Number of participating devices	Per device savings (kW)	Event-hour savings (kW)
6/3/2024	13:00	14:00	6,852	0.17	1,139.7
6/14/2024	16:00	17:00	6,618	0.20	1,329.7
6/14/2024	17:00	18:00	6,618	0.41	2,715.1
7/31/2024	16:00	17:00	6,918	0.38	2,595.3
7/31/2024	17:00	18:00	6,918	0.48	3,315.8
8/27/2024	16:00	17:00	6,944	0.66	4,561.1
8/27/2024	**17:00**	**18:00**	**6,944**	0.79	**5,493.7**

Table 237 provides the lagged temperature for both the baseline days and the event day. The table also shows the new weather-adjusted baseline and the calculated per-device savings for commercial participants.

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Table 237. Smart Direct Load Control Pilot—MISO Calculation #3 Adjusted Baseline and Per-Device Savings Commercial Accounts

Date	Start time (CST)	End time (CST)	Unadjusted baseline (kW per device)	Baseline temperature (two-hour lag, °F)	Event temperature (two-hour lag, °F)	Weather-adjusted baseline (kW per device)	Per device savings (kW)
6/3/2024	13:00	14:00	0.76	81.9	72.0	0.51	0.24
6/14/2024	16:00	17:00	0.76	84.6	93.0	0.97	0.18
6/14/2024	17:00	18:00	0.65	85.1	95.0	0.90	0.26
7/31/2024	16:00	17:00	0.96	86.1	95.0	1.26	0.15
7/31/2024	17:00	18:00	0.86	86.5	95.0	1.15	0.24
8/27/2024	16:00	18:00	1.12	92.8	98.0	1.26	0.35
8/27/2024	17:00	18:00	0.99	93.0	98.0	1.13	0.46

Table 238 summarizes each hour's load reduction, with the final evaluated load reduction in **bold**.

Table 238. Smart Direct Load Control Pilot—MISO Calculation #3 Results Commercial Accounts

Date	Start time (CST)	End time (CST)	Number of participating devices	Per device savings (kW)	Event-hour savings (kW)
6/3/2024	13:00	14:00	2,594	0.24	619.8
6/14/2024	16:00	17:00	2,619	0.18	458.8
6/14/2024	17:00	18:00	2,619	0.26	688.6
7/31/2024	16:00	17:00	2,489	0.15	**383.6**
7/31/2024	17:00	18:00	2,489	0.24	588.8
8/27/2024	16:00	17:00	2,694	0.35	944.3
8/27/2024	**17:00**	**18:00**	**2,694**	0.46	**1,245.7**

Table 239 provides the lagged temperature for both the baseline days and the event day. The table also shows the new weather-adjusted baseline and the calculated per-device savings for all participants.

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Table 239. Smart Direct Load Control Pilot—MISO Calculation #3 Adjusted Baseline and Per-Device Savings (All Thermostats)

Date	Start time (CST)	End time (CST)	Unadjusted baseline (kW per device)	Baseline temperature (two-hour lag, °F)	Event temperature (two-hour lag, °F)	Weather-adjusted baseline (kW per device)	Per device savings (kW)
6/3/2024	13:00	14:00	0.73	81.9	72.0	0.34	0.19
6/14/2024	16:00	17:00	0.96	84.6	93.0	1.31	0.19
6/14/2024	17:00	18:00	0.97	85.1	95.0	1.38	0.37
7/31/2024	16:00	17:00	1.18	86.1	95.0	1.67	0.32
7/31/2024	17:00	18:00	1.19	86.5	95.0	1.66	0.42
8/27/2024	16:00	18:00	1.38	92.8	98.0	1.61	0.57
8/27/2024	17:00	18:00	1.37	93.0	98.0	1.59	0.70

Table 240 summarizes each hour's load reduction, with the final evaluated load reduction in **bold**.

Table 240. Smart Direct Load Control Pilot—MISO Calculation #3 Results (All Thermostats)

Date	Start time (CST)	End time (CST)	Number of participating devices	Per device savings (kW)	Event-hour savings (kW)
6/3/2024	13:00	14:00	9,545	0.19	1,771.3
6/14/2024	16:00	17:00	9,328	0.19	1,802.2
6/14/2024	17:00	18:00	9,328	0.37	3,431.7
7/31/2024	16:00	17:00	9,444	0.32	2,994.4
7/31/2024	17:00	18:00	9,444	0.42	3,931.7
8/27/2024	16:00	17:00	9,651	0.57	5,515.5
8/27/2024	**17:00**	**18:00**	**9,651**	**0.70**	**6,753.4**

Across all the event hours during PY2024, the highest single hour represents the program savings. The regression analysis results show that the August 27, 2024, SDLC event produced the highest participant savings. Overall, 9,651 participating smart thermostats reduced load by an average of 0.70 kW per device from 17:00 to 18:00, equating to 6,753 kW in total load reduction.

Table 241 details the demand reduction estimates for each event in the 2024 season. The event with the highest savings occurred on August 27, with 6.75 MW of load reduction, based on the MISO 3 weather-adjusted baseline method.

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Table 241. Smart Direct Load Control Pilot—Overall Demand Response Results by Event

Date	Reported savings (MW)	Evaluated savings (MW)	Realization rate
6/3/2014	8.49	1.77	20.9%
6/14/2024	8.69	3.43	39.5%
7/31/2024	8.74	3.93	45.0%
8/27/2024	9.06	6.75	74.5%

14.5 DETAILED PROCESS EVALUATION RESULTS

As part of the PY2024 process evaluation for the program, the EM&V team conducted 128 telephone surveys with 39 commercial participants, 30 residential self-install participants, and 59 residential program-installed participants. The participant survey investigated sources of awareness and preferred methods of communication, participation experiences, decision-making, program satisfaction, and customer firmographics/demographics.

14.5.1 Respondent Characteristics

The Smart DLC program helps residential and business customers save energy by participating in load control events. The type of customers surveyed included a mix of commercial and residential customers with different backgrounds and building activities.

14.5.1.1 Residential Demographics

Table 242 below summarizes the characteristics of the residential participants surveyed. Household size ranged from one to seven people with an average number of residents of 2.4. All but two respondents owned their home (98 percent), and over one-half of respondents were over the age of 55 (59 percent). Another 21 percent of respondents were between 45 and 54 years of age. Also, over one-half of respondents had completed college (30 percent) or an advanced degree (25 percent). An additional 24 percent had completed at least some college course. Most respondents had an annual household income above the federal poverty level (FPL) based on household size (85 percent).

Table 242. Smart Direct Load Control Pilot—Residential Participant Demographics

Respondent characteristic		Mean/percentage
Household size	Mean number of residents	2.4
	Respondents (n)	**84**
Own or rent	Own	97.8%
	Rent	2.2%
	Respondents (n)	**89**

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Respondent characteristic		Mean/percentage
Respondent age	18–24	0.0%
	25–34	10.2%
	35–44	10.2%
	45–54	20.5%
	55–64	19.3%
	65 or older	39.8%
	Respondents (n)	**88**
Respondent highest level of education	Less than high school	0.0%
	High school graduate	10.3%
	Vocational/technical school	10.3%
	Some college	24.1%
	Completed college	29.9%
	Graduate studies or advanced degree	25.3%
	Respondents (n)	**87**
2023 annual household income (relative to FPL and number of household members)	Less than FPL	15.3%
	Greater than FPL	84.7%
	Respondents (n)	**72**

Source: Participant Survey Question D0, D1, D2, D3, D4
Don't know and *refused* responses are excluded.

14.5.1.2 Commercial Firmographics

The table below summarizes the characteristics of the commercial participants surveyed. The most common business types of respondents were retail or professional services and office (18 percent each). Just over half of commercial respondents (55 percent) own the space at the participating location and have, on average, over six employees. Most can make business decisions at a local level (87 percent).

Table 243. Smart Direct Load Control Pilot—Commercial Participant Firmographics

Business characteristic		Mean/percentage
Business activity	Retail / personal services	17.9%
	Office	17.9%
	Manufacturing –1 or 2 shifts	10.3%
	Medical—office/clinic	10.3%
	Religious	10.3%
	Lodging	7.7%
	Professional services	7.7%

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Business characteristic		Mean/percentage
	Other	5.1%
	Educational	2.6%
	Gas station	2.6%
	Grocery / food store	2.6%
	Restaurant	2.6%
	Warehouse	2.6%
	Respondents (n)	**39**
Own or rent	Rent or lease	42.1%
	Own	55.3%
	Own some and rent/lease some	2.6%
	Respondents (n)	**38**
Number of employees (full-time and part-time)	Mean	6.6
	Respondents (n)	**33**
Level business decisions are made	Locally	86.8%
	Regionally	7.9%
	Nationally	5.3%
	Worldwide	0.0%
	Respondents (n)	**38**

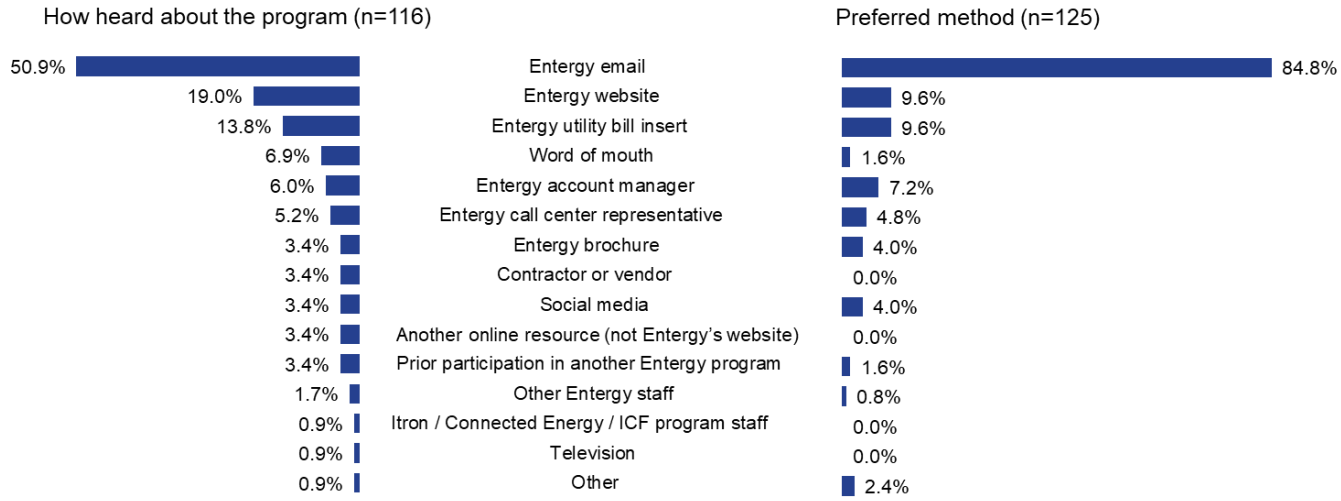
Source: Participant Survey Question E1, E2, E3, E4
Don't know and *refused* responses are excluded.

14.5.2 Program Marketing

Entergy email was the most mentioned way respondents reported learning about the SDLC pilot program (51 percent). This was followed by the Entergy website and Entergy utility bill insert (19 percent and 14 percent, respectively). In response to respondents' preference for receiving information about EAL's energy efficiency programs in the future, the most frequently mentioned preferred communication channel was from Entergy through email (85 percent). The following most preferred method was either Entergy website or bill insert (10 percent each). Figure 36 illustrates how participants learned about the SDLC pilot program and how they prefer to hear about EAL's future programs. Responses were consistent between residential and commercial customers. Both groups were most likely to hear about the program from an Entergy email as well as the email being the preferred method.

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Figure 36. Smart Direct Load Control Pilot—How Participants Learned and Prefer to Hear about the Program



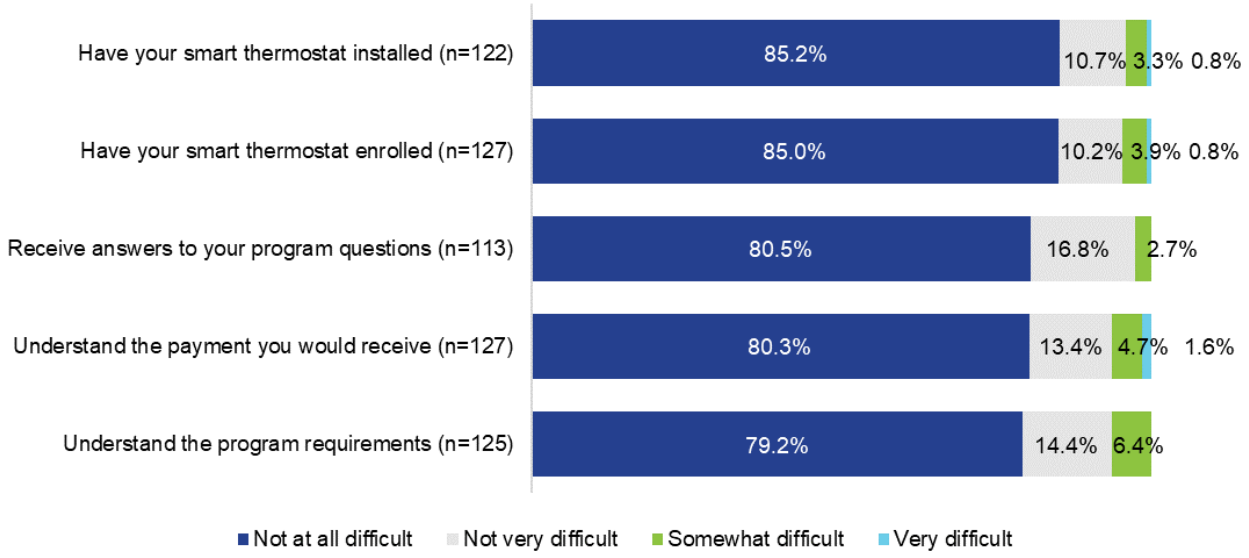
Source: Participant Survey Question A1, A2
Multiple responses were allowed.
Don't know and *refused* responses were excluded.

14.5.3 Participant Experience

Overall, almost all respondents deemed participation in the program not difficult. The survey used a scale of *not at all difficult*, *not very difficult*, *somewhat difficult*, or *very difficult*, to ask respondents to rate the difficulty in each of the following program aspects: having the thermostat installed, understanding the payments, enrollment of the thermostat, receiving answers to questions, and understanding program requirements. As shown in Figure 37, between 94 percent and 96 percent of respondents rated all aspects as being either *not at all difficult* or *not very difficult*. Four respondents rated one program aspect as *very difficult*. One respondent rated the enrollment of the smart thermostat *very difficult* but did not provide any feedback on what could have been improved with the process. Two respondents felt it was very difficult to understand the payments they would receive. One of these respondents suggested a written or emailed explanation would have helped. The second respondent offered no suggestions for improvement. The one respondent who said the installation of the smart thermostat was very difficult said the "app needs new phones."

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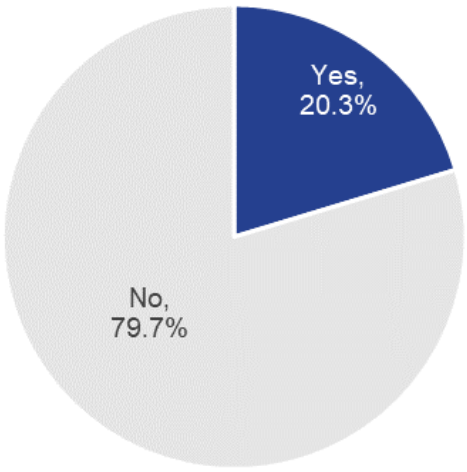
Figure 37. Smart Direct Load Control Pilot—Difficulty Ratings of Pilot Aspects



Source: Participant Survey Question P5A, P5D, P5E, P5F, P5G
Multiple responses were allowed.
Don't know and *refused* responses were excluded.

Figure 38 shows that 20 percent of survey respondents said they noticed changes in their home or business comfort while participating in the program. Residential customers were slightly more likely to notice changes compared to commercial customers (22 percent and 17 percent respectively).

Figure 38. Smart Direct Load Control Pilot—Noticed Changes to Comfort as a Result of Participating (n=118)

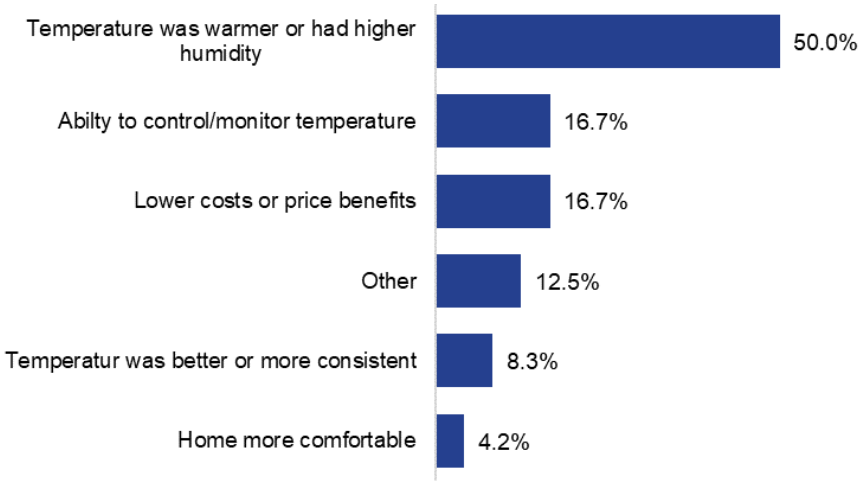


Source: Participant Survey Question P7

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Of respondents who noticed changes, one-half felt the temperature got warmer in the home or building because of participating in the program. Other changes included the ability to control or monitor the temperature with the remote feature and lower costs, including price benefits (17 percent each). Other responses are shown in Figure 39.

Figure 39. Smart Direct Load Control Pilot—Changes Noticed as a Result of Participating in the Program

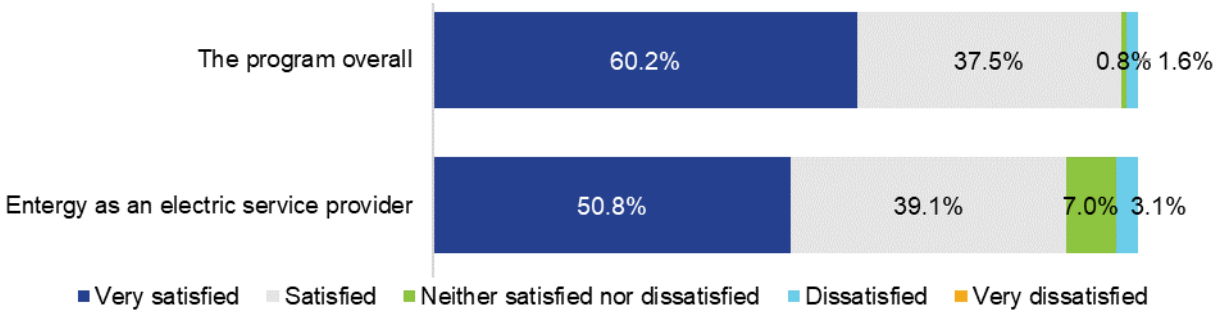


Source: Participant Survey Question P7o

14.5.4 Program Satisfaction

Overall, participants rated their satisfaction with the program and EAL as their electricity provider highly. Using a *very satisfied*, *satisfied*, *neutral*, *dissatisfied*, and *very dissatisfied* scale, 98 percent and 90 percent said they were *satisfied* or *very satisfied* with the program and EAL, respectively. Satisfaction with the program was consistent between residential and commercial respondents (99 percent and 95 percent, respectively). While still high, satisfaction with Entergy as their electricity provider varied slightly between residential and commercial respondents, with residential respondents less likely to provide *very satisfied* and *satisfied* ratings (88 percent and 95 percent, respectively). No respondents reported being *very dissatisfied* with the program overall or with EAL as their electric service provider, as shown in Figure 40.

Figure 40. Smart Direct Load Control Pilot—Participant Satisfaction with the Program Overall and EAL as an Electric Service Provider (N=128)

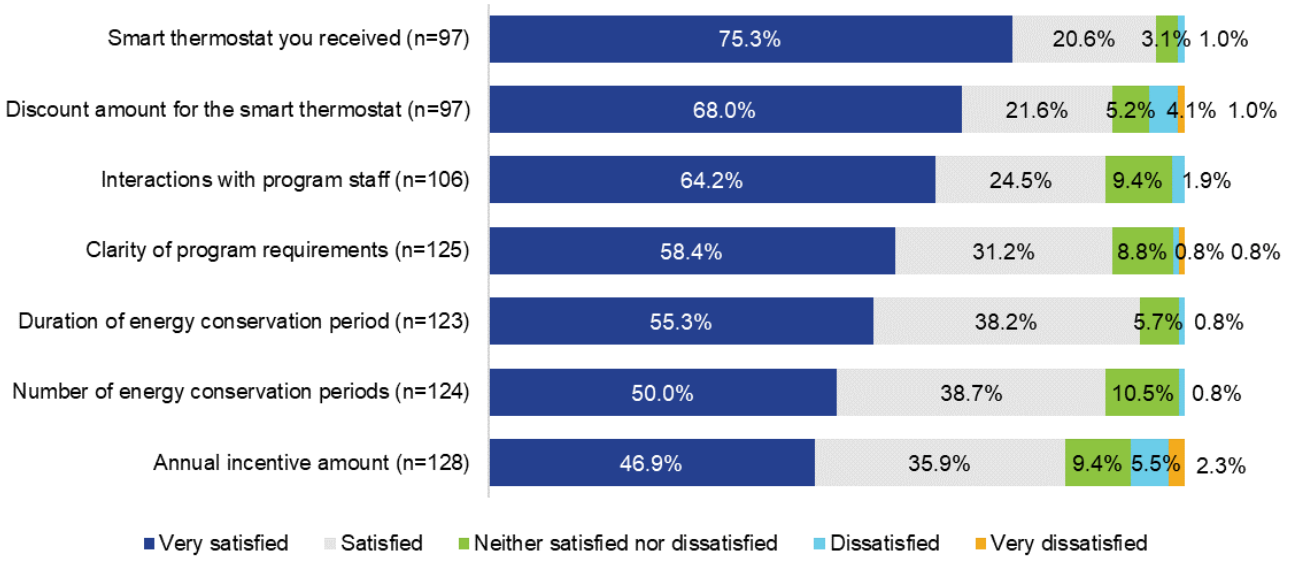


Source: Participant Survey Question SAT2, SAT7
* *Don't know*, *not applicable*, and *refused* responses are excluded.

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Figure 41 shows the satisfaction ratings of participants' experiences with the program were high across various aspects. Respondents who said they were *satisfied* or *very satisfied* ranged between 83 percent and 96 percent across all aspects. One residential respondent said they were *very dissatisfied* with the annual incentive amount. Two commercial customers were *very dissatisfied* with two program aspects each. One commercial customer was *very dissatisfied* with the amount of the discount for the thermostat and the annual incentive amount. The other commercial respondent was *very dissatisfied* with the annual incentive amount and the clarity of program eligibility requirements.

Figure 41. Smart Direct Load Control Pilot—Participant Satisfaction with Program Aspects



Source: Participant Survey Question SAT1
* *Don't know*, *not applicable*, and *refused* responses are excluded.

In general, commercial respondents had lower satisfaction ratings than residential respondents in all aspects when looking at *very satisfied* and *satisfied* percent ratings. Additionally, commercial respondents were more likely to use the *very dissatisfied* rating, as shown in Table 244

Table 244. Smart Direct Load Control Pilot—Participant Satisfaction with Program Aspects by Sector

Aspect	Sector	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied	Respondents
Discount amount for the smart thermostat	Com	55.3%	28.9%	10.5%	2.6%	2.6%	38
	Res	76.3%	16.9%	1.7%	5.1%	0.0%	59
Annual incentive amount	Com	51.3%	30.8%	7.7%	5.1%	5.1%	39
	Res	44.9%	38.2%	10.1%	5.6%	1.1%	89
Clarity of program requirements	Com	50.0%	31.6%	13.2%	2.6%	2.6%	38
	Res	62.1%	31.0%	6.9%	0.0%	0.0%	87
Number of energy conservation periods	Com	44.4%	41.7%	11.1%	2.8%	0.0%	36
	Res	52.3%	37.5%	10.2%	0.0%	0.0%	88

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Aspect	Sector	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied	Respondents
Duration of energy conservation period	Com	50.0%	41.2%	5.9%	2.9%	0.0%	34
	Res	57.3%	37.1%	5.6%	0.0%	0.0%	89
Interactions with program staff	Com	57.6%	30.3%	9.1%	3.0%	0.0%	33
	Res	67.1%	21.9%	9.6%	1.4%	0.0%	73
Smart thermostat you received	Com	73.7%	21.1%	5.3%	0.0%	0.0%	38
	Res	76.3%	20.3%	1.7%	1.7%	0.0%	59

Source: Participant Survey Question SAT1
* *Don't know*, *not applicable*, and *refused* responses are excluded.

All but one respondent said they would recommend the program to others if given the opportunity. This respondent was a commercial customer who indicated they would not recommend the program because there was "no incentive." This respondent said they did not know if they would participate in the program again next summer. No one said, in absolute terms, that they would not continue participating, which speaks to the high satisfaction with the program.

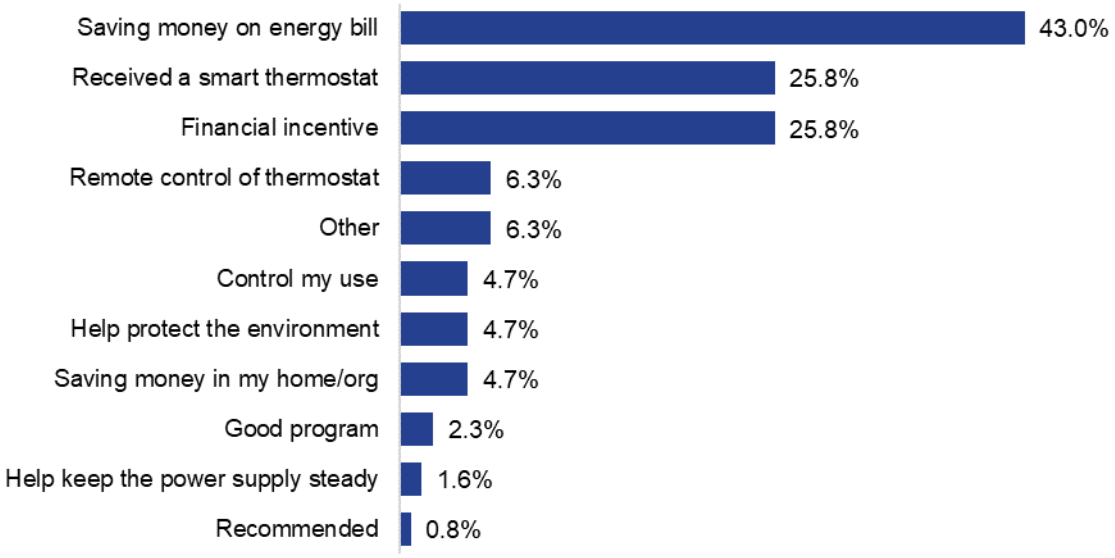
Five respondents did not know if they would continue participating in the program. Two said they did not know why they would not continue. One respondent moved to another state, so they will not be participating; one did not believe the opt-in amount was high enough (residential respondent), and one wanted to be contacted to continue participation (commercial respondent).

14.5.5 Decision-Making

The ability to save money on their energy bill was the most common motivator for participating in the program (43 percent). This was followed by the free smart thermostat and the financial incentive (26 percent each). These three reasons were consistent between residential and commercial respondents. No commercial respondents said they were recommended the program, wanted to save money at their organization, or the need to help keep the power supply steady as program participation motivators. Figure 42 shows the percentages across additional areas for all survey respondents.

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Figure 42. Smart Direct Load Control Pilot—Motivators for Program Participation (n=128)



Source: Participant Survey Question P1
Multiple responses were allowed.
Don't know and *refused* responses were excluded.

Most respondents said they had no initial questions or concerns about participating in the program (90 percent). The reasons for concern mentioned by 10 percent of respondents (13 respondents) were a lack of understanding of how the program worked and wanted to understand the program better (5 respondents), the timing of the events (4 respondents), how often the events would occur (2 respondents), and how much control EAL has over their thermostat (2 respondents). Some respondents feared it would get too warm during events, particularly for churches during their services.

Thirteen percent of respondents (16 respondents) said they called the program's toll-free number or visited the program website to answer questions about the program. All but four respondents said their questions were sufficiently answered. The questions included how to change the last name on the checks and to check the thermostat for accuracy. Two respondents did not say what the communication was regarding but noted they did not get a response or were put on hold and forgotten about.

14.6 DETAILED NET-TO-GROSS RESULTS

The participant survey resulted in an overall NTG ratio of 87 percent, including free-ridership and spillover. Free-ridership was 17 percent, and almost 5 percent spillover was observed, resulting in an overall NTG ratio of 87 percent. Free-ridership was higher among commercial customers (26 percent) than residential customers (11 percent). Most of the spillover is attributable to residential customers. Table 151 below summarizes NTG results.

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Table 245. Smart Direct Load Control Pilot—Net-to-Gross Results by Measure Category

Measure category/sector	Free-ridership responses	Free-ridership	Spillover responses	Spillover	NTG
Smart thermostat - commercial	39	25.6%	39	0.6%	75.0%
Smart thermostat - residential	59	10.7%	56	8.2%	97.4%
Overall	**98**	**17.4%**	**95**	**4.8%**	**87.3%**

14.6.1.1 Free-Ridership

Feedback from participants suggests that the program influenced participants' decision to install energy-efficient measures, resulting in 11 percent free-ridership. Fifty-one out of 98 respondents (52 percent) said they were *not* planning to purchase and install their smart thermostat in the same year before learning about the program. In addition, 51 percent of respondents said their budget would *not* have accommodated the thermostats' full cost had the program rebate not been available (50 respondents). Ten percent of respondents said they would have purchased the exact same thermostat in the absence of the program (10 respondents). Table 152 presents free-ridership results.

Table 246. Smart Direct Load Control Pilot—Free-Ridership Results

Sector	Surveyed (n)	Free-ridership
Commercial	39	25.6%
Residential	56	10.7%

14.6.1.2 Spillover

Twenty-two of 98 respondents assessed for spillover reported installing additional energy-efficient equipment. Eight respondents said their experience with the program was *not at all important* or *not very important* in the additional project and, therefore, not eligible for spillover. Six respondents indicated they installed lighting, which is no longer eligible for spillover, or could not provide enough information for us to be able to quantify spillover. The remaining eight respondents assessed for spillover resulted in attributable spillover savings. Six respondents were residential customers who installed water heaters, lighting controls, weatherization (sealing and weather stripping), windows, and a sliding glass door. Two commercial respondents installed lighting controls, HVAC equipment, and a water heater. Some respondents reported installing more than one eligible measure. Table 153 presents the spillover results from the participant survey.

Table 247. Smart Direct Load Control Pilot—Participant Spillover Results

Sector	Surveyed (n)	Spillover
Commercial	39	0.6%
Residential	56	8.2%

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15.0 AGRICULTURAL IRRIGATION LOAD CONTROL

The Agricultural Irrigation Load Control (AILC) program is a demand response program focusing on irrigation systems employed in the agricultural sector. The program is implemented by Connected Energy, which (1) provides marketing, a call center, control devices, and metering equipment and services; (2) conducts program tracking; and (3) calculates event-level savings for Entergy Arkansas, LLC (EAL).

The AILC program aims to reduce kilowatt demand loads when load control events occur during the summer (June 1 through August 31). Participants in the program have a control device installed on their motor, allowing the program to turn the motor off or on remotely. Participants can remotely control their motors, subject to program limits associated with event participation, or protect the motor from rapid on/off cycles. Except in emergency events, curtailment events are scheduled on weekdays for up to four hours and are limited between 12:00 p.m. and 9:00 p.m. Participants receive an email or text notification of the upcoming event two hours before the event starts, including the duration of the curtailment. Incentives are paid to participants every month and vary according to the horsepower (HP) of the enrolled motors.

The EM&V team deployed two methods for estimating load reductions, all summarized in the Midcontinent Independent System Operator's (MISO) Business Practice Manual for Demand Response[136] (MISO Business Practice Manual). Table 248 details the evaluation activities completed for the program in PY2024.

Table 248. Agricultural Irrigation Load Control—Data Collection and Evaluation Activities

NTG approach	Process evaluation activities	Gross impact evaluation completes			
		Tracking system review	Desk reviews	On-site verification	Metered data analysis[137]
Stipulated at 1.0 as industry practice	Program staff interviews (2) Material review	N/A	N/A	N/A	Census

15.1 KEY FINDINGS

In PY2024, the AILC program responded to six events called on six separate days. The first of the events was a test event (June 3), used to verify equipment operability and verify measurement and verification (M&V) data collection, while the other events were used to reduce load during the event hours. Of the six events, the test event on June 3 was one hour, the July 3 and August 8 events were two hours, and the June 14, July 31, and August 27 events were four hours. The data collected by the metering equipment allows each participant to have their load metered in a 15-minute interval for the entire load-control season. It provides highly granular data to support program baseline and event savings calculations.

[136] Midcontinent Independent System Operator Demand Response Business Practices Manual. BPM-026-r11. Effective October 1, 2024.
[137] This column refers to EAL customer meter data provided to the EM&V team instead of primary metered data collected as part of the on-site M&V.

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The AILC program's evaluated savings match those calculated by the program implementer, Connected Energy. The approach taken by Connected Energy and the evaluation, measurement, and verification (EM&V) team uses the MISO *symmetric multiplicative adjustment* (SMA) *baseline calculation*, which is appropriate for registering savings with MISO.

In PY2024, the AILC program achieved 18.3 MW in gross demand savings and a realization rate of 100.0 percent, highlighted in Table 249. These savings are based on the maximum event savings during the hour ending 18:00 on July 3, 2024. Overall, 1,564 customers participated in the AILC program during PY2024.

Table 249. Agricultural Irrigation Load Control—Reported, Evaluated, and Net Savings

Energy/demand savings	Reported savings	Evaluated savings	Realization rate	NTG ratio[138]	Net savings	Program contribution to portfolio savings
Energy savings (MWh)	-	-	N/A	N/A	N/A	N/A
Demand savings (MW)	18.3	18.3	100.0%	100.0%	18.3	22.8%

* The AILC program does not claim energy savings. Therefore, these cells are represented with a dash.

The program fell short of savings goals, achieving 80.3 percent of the demand savings goal, as detailed in Table 250.

Table 250. Agricultural Irrigation Load Control—Savings Goals and Achievements

Energy/demand savings	Savings goal	Net savings achieved	Percentage of goal achieved
Energy savings (MWh)	-	-	-
Demand savings (MW)	22.8	18.3	80.3%

* The AILC program does not have an energy savings goal. Therefore, these cells are represented with a dash.

[138] NTG for demand response programs is inherently 100 percent.

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15.2 RECOMMENDATIONS

The EM&V team found a new area for program improvement, detailed in Table 251.

Table 251. Agricultural Irrigation Load Control—PY2024 Recommendations

Type	Recommendation	Key finding
PY2024 impact recommendations	**Recommendation 1:** Consider building a baseline of similar days from the entire summer	MISO baselines use only days before the event to construct a baseline to estimate demand savings. However, examining non-event, non-holidays from across the summer may provide a more accurate baseline than restricting the pool of comparable days to those during a specific period before the event. Comparing demand and weather during the pre-event hours against the same hours during days from the entire summer could provide a more accurate counterfactual baseline.

Table 252. Agricultural Irrigation Load Control—Status of Prior Year Recommendations

Status of prior year recommendations	
BY2023 impact recommendations	• Consider tracking opt-outs by event or event-hour. ○ Under consideration.
BY2023 process recommendations	• Continue to assess the role of this program in EAL's overall demand response opportunities. ○ Complete. EAL's 2024-2026 Energy Efficiency Plan realigned demand savings goals across the suite of load control programs to more realistically represent achievable savings from each program.

15.3 METHODOLOGY

The subsections below summarize the methodology used to evaluate demand savings achieved through the AILC program.

15.3.1 Impact Evaluation

Connected Energy's methodology follows the *SMA method* to calculate the baseline conditions. The *SMA method* is one of the three methods approved by MISO to register program savings with MISO and is used by the EM&V team to evaluate the program's event savings. The *SMA method* is described in greater detail in subsequent sections of this report.

The events called in PY2024 are described in Table 253.

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Table 253. Agricultural Irrigation Load Control—PY2024 Load Control Events

Date	Start time (CDT)	End time (CDT)	Active devices	Event type
06/03/2024	13:00	14:00	539	Test event
06/14/2024	15:00	19:00	829	Normal event
07/03/2024	16:00	18:00	969	Normal event
07/31/2024	15:00	19:00	918	Normal event
08/06/2024	16:00	18:00	967	Normal event
08/27/2024	15:00	19:00	768	Normal event

For each event, savings are based on the participants' interval meter data. For each hour of the day, loads from event participants are summed together to create a single *irrigation load control* load. Observation of the loads on days before the event, on the same hour as an event hour, is adjusted by observing differences between pre-event hours on the baseline and event days. This process is described in more detail below.

15.4 DETAILED IMPACT EVALUATION RESULTS

Next, we present evaluation results by calculation method.

15.4.1 Baseline Calculation

MISO's *SMA baseline calculation* uses the ten most recent eligible days (non-holiday, non-event weekdays) before the event to construct a baseline load schedule. Since event- and non-event-day loads are not identical during non-event hours, an adjustment factor corrects the baseline load schedule to be more representative of actual event-day loads. MISO's *SMA baseline calculation* is used to measure both the implementer's performance for EAL and MISO savings registration. The baseline and resulting savings calculations focus on individual event hours.

The baseline calculation has three components: the *unadjusted baseline*, the *adjustment factor*, and the *application of the adjustment factor* to the unadjusted baseline to create a final baseline calculation.

15.4.1.1 Unadjusted Baseline Calculation

The baseline calculation is conducted in the following steps applied to each hour of the event:

1. Before the event, the ten most recent eligible days (non-holiday, non-event weekdays) are selected.
2. An *unadjusted hourly baseline* is calculated for a given hour by summing the participating 15-minute metered loads for each hour corresponding to the event hours for each of the ten baseline days.
3. The event's *baseline hourly load* is calculated by averaging the summed 15-minute metered intervals; the result is an *unadjusted hourly baseline*.

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15.4.1.2 Symmetrical Multiplicative-Adjusted Baseline Factor

MISO's *SMA baseline* corrects the unadjusted baseline load schedule to better represent actual event-day loads. Adjustment is conducted to generate a more accurate counterfactual baseline load to represent what would have occurred on an event day without a load control event. The adjustment factor uses pre-event loads during baseline and event days to inform the degree of adjustment required. If pre-event loads on event days exceed baseline loads, baseline loads will be scaled upwards. If pre-event loads on event days are less than baseline loads, baseline loads will be scaled downwards. The multiplicative-adjustment procedure is as follows:

1. Extract three hours of pre-event load data beginning four hours before the event starts from the unadjusted baseline load and the event-day load. For example, for an event beginning at 14:00, extract unadjusted baseline and event-day loads for three hours spanning 10:00 to 13:00.
2. Calculate the *SMA factor* by taking the ratio of (1) the mean of the three hours of event-day loads and (2) the mean of three hours of unadjusted-baseline loads. This adjustment factor may not adjust the baseline by more than 20 percent in either direction. If the multiplicative adjustment exceeds 1.2, then set the multiplicative adjustment is 1.2. If the multiplicative adjustment is less than 0.8, assume the multiplicative adjustment is 0.8.
3. Calculate the *SMA baseline* by multiplying the unadjusted baseline load by the *SMA factor*.

15.4.1.3 Final Baseline Calculation

The final baseline calculation combines the unadjusted baseline with the adjustment factor. A cap of 0.20 is placed on this adjustment factor, limiting the positive or negative adjustment to the baseline to 20 percent. If the calculated adjustment factor is greater than 1.20 or less than 0.80, the adjustment factor is set at the cap. The following formula is used to calculate a given event hour's baseline:

*Adjusted Baseline kW = Unadjusted Baseline kW * Adjustment Factor*

15.4.1.4 Savings Calculation

Savings under the MISO *SMA calculation method* are presented for each hour of an event. The savings formula is:

Savings kW = Adjusted Baseline kW - Event Hour kW

15.4.2 Materials Review

Information found on the AILC program website includes a general description of the program, detailing eligibility requirements and payment schedules for participating customers. The payment schedule accurately describes the relationship between pump size (HP) and payment. A copy of the program manual, a frequently-asked-questions section, and program contact information were easily found on the website.

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15.5 OVERALL SAVINGS ESTIMATES

The EM&V team evaluated Connected Energy's savings calculation by reviewing the program's metered load data, confirming the methodology and results, repeating the calculation steps, and reviewing additional input assumptions. To conduct the evaluation, the EM&V team received the following information from Connected Energy:

- 15-minute load data spanning May 11, 2024 through August 31, 2024 and
- calculations of the savings for each event hour for 2024.

The EM&V team finds that the MISO *SMA baseline calculation* is the most appropriate for the AILC program; of the three MISO approaches, this method best captures the variability in irrigation loads. Irrigation presents a challenge for demand-response programs in that the key driver is precipitation. Precipitation is not a factor that MISO currently includes in its weather adjustment method, which is based solely on load responses to temperature. MISO's other option—a *10 of 10 unadjusted baseline method*—is appropriate for more stable loads less influenced by weather or scheduling factors during event hours. Given MISO's three options, the EM&V team finds this approach is the most appropriate, and no adjustments were made based on the calculation method.

Next, the EM&V team attempted to replicate the savings calculations provided by Connected Energy. The savings are based on average hourly baseline loads, the adjustment factor, and event-day hourly average loads. Table 254 describes the key calculation factors for each PY2024 event hour. Realization rates on savings range from 98.4 to 105.0 percent. Connected Energy and the EM&V team agreed that the peak performing event hour occurred on July 3, 2024. The EM&V team found the peak performing event hour was 17:00 to 18:00 on July 3 (in bold in Table 254), while Connected Energy found the hour to be 16:00 to 17:00. The difference between the performances during these two hours is minor.

There are minor differences in both unadjusted baseline kilowatt and SMA factors between Connected Energy and the EM&V team; the baseline adjustment factors for the EM&V team and Connected Energy are the same for all four events. Unadjusted baseline loads are different for all event hours covered during PY2024; however, differences are minor in absolute terms and are similar in magnitude between Connected Energy and the EM&V team on all event days.

Table 254. Agricultural Irrigation Load Control—Load Control Event Baseline and Savings Comparison[139]

Date	Hour starting (CDT)	Event hour load (kW)	Connected energy unadjusted baseline load (kW)	EM&V team unadjusted baseline load (kW)	Baseline adjusted factor	Connected energy event hour savings (kW)	EM&V team event hour savings (kW)	Realization rate (%)
6/3/2024	13:00	376.5	3,324.2	3,324.2	1.20	3,608.8	3,612.5	100.1
6/14/2024	15:00	687.0	7,654.0	7,654.0	1.20	8,554.0	8,497.8	99.3
6/14/2024	16:00	769.7	7,774.5	7,774.5	1.20	8,559.7	8,559.7	100.0

[139] Savings results may not be exact per the data in the table due to rounding occurring at several steps of the calculation.

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Date	Hour starting (CDT)	Event hour load (kW)	Connected energy unadjusted baseline load (kW)	EM&V team unadjusted baseline load (kW)	Baseline adjusted factor	Connected energy event hour savings (kW)	EM&V team event hour savings (kW)	Realization rate (%)
6/14/2024	17:00	777.0	7,860.8	7,860.8	1.20	8,656.0	8,656.0	100.0
6/14/2024	18:00	867.0	7,691.3	7,816.8	1.20	8,362.5	8,513.1	101.8
7/3/2024	16:00	1,178.5	16,165.7	16,160.0	1.20	18,447.6	18,213.5	98.7
7/3/2024	**17:00**	**1,173.3**	**16,257.1**	**16,251.4**	**1.20**	**18,321.1**	**18,328.4**	**100.0**
7/31/2024	15:00	752.5	12,659.3	12,681.9	1.10	13,228.0	13,199.7	99.8
7/31/2024	16:00	620.1	12,695.1	12,715.7	1.10	13,373.2	13,369.3	100.0
7/31/2024	17:00	451.0	12,681.2	12,702.9	1.10	13,527.0	13,524.4	100.0
7/31/2024	18:00	650.2	12,055.9	12,651.8	1.10	12,638.5	13,269.0	105.0
8/6/2024	16:00	1,227.7	13,711.5	13,714.8	1.20	15,393.9	15,230.0	98.9
8/6/2024	17:00	922.3	13,714.9	13,719.0	1.20	15,632.8	15,540.5	99.4
8/27/2024	15:00	692.0	7,652.1	7,652.1	1.03	7,329.9	7,210.2	98.4
8/27/2024	16:00	838.5	7,756.8	7,756.8	1.03	7,171.8	7,171.8	100.0
8/27/2024	17:00	559.6	7,755.7	7,755.7	1.03	7,449.6	7,449.6	100.0
8/27/2024	18:00	902.5	7,662.0	7,779.8	1.03	7,009.9	7,131.5	101.7

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16.0 CONSISTENT WEATHERIZATION APPROACH AND ACT 1102

This section presents the EM&V team's consistent weatherization approach (CWA) estimates for Entergy Arkansas, LLC residential programs in the PY2024. An overview of EAL's implementation of the CWA is outlined in the Arkansas Technical Reference Manual 9.2, Volume 1: EM&V Protocol C. EAL implements the CWA through four residential programs: Home Energy Solutions, Low-Income Solutions, Energy Solutions for Manufactured Homes, and Energy Solutions for Multifamily Homes.

Order No.7 in Docket No.13-002-U (Order) of the Arkansas Public Service Commission requires all investor-owned utilities (IOU) to implement a consistent approach to providing weatherization services to eligible Arkansas residents. The Order identified key programmatic features that this CWA must include; these features were further developed and refined into a recommended framework—referred to as the Core program—for implementation by the IOUs.

Critical components of the Core program are:

- direct installation of low-cost energy-saving measures;
- installation of a set of *weatherization* measures, including *insulation* and *air sealing*; and
- management of the contractors that deliver the home assessments and installations.

The EM&V team presents estimates of direct installation, *weatherization* measures, and information regarding the number of contractors that participated in these installations during program year (PY) 2024 (PY2024).

16.1 CONSISTENT WEATHERIZATION APPROACH FINDINGS

Table 255 provides program-specific counts of participants and quantities of energy-saving measures provided under the Home Energy Solutions, Energy Solutions for Multifamily Homes, Energy Solutions for Manufactured Homes, and Low-Income Solutions programs. A total of 12,858 unique participants who installed energy-saving measures were enrolled in the four programs, providing a total of 26,099 energy-saving measure units across the installed measures. The number of installed measures significantly decreased by 54 percent compared to 56,758 measures installed in bridge year 2023 (BY2023), even though the number of program participants slightly increased from 12,403 participants in BY2023. This decrease can be attributed to the *lighting* measure installation coming to a halt midyear in BY2023 due to new baseline standards coming into effect, resulting in no energy savings for this measure. There were 62,591 *lighting* measure units installed in PY2022 compared to 28,283 in BY2023 and only 35 in PY2024.

Within the EAL residential program offerings, *weatherization* improvements continue to be among the most popular measures in the residential programs. *Air sealing* and *duct sealing* comprised over 13,633 of the energy efficiency units installed in PY2024, representing about 71 percent of energy savings across the year. These results were lower than BY2023, where 84 percent of savings were provided by *air sealing* and *duct sealing* measures across the Home Energy Solutions, Energy Solutions for Multifamily Homes, Energy Solutions for Manufactured Homes, and Low-Income Solutions programs.

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Table 255. PY2024 Participation in CWA Programs

Program	Participants*	Measure quantity
Home Energy Solutions	8,504	15,809
Energy Solutions for Multifamily Homes	2,025	4,436
Energy Solutions for Manufactured Homes	563	1,096
Low-Income Solutions	1,859	4,758
Total	**12,858**	**26,099**

* Participants were identified by unique *AccountNumber* and installed at least one energy-saving measure. Some accounts participated in more than one program. Thus, the total count of participants may not equal the sum of the counts by measure category.

Table 256 highlights the number of participants and quantities of measures received under the Home Energy Solutions, Energy Solutions for Manufactured Homes, Energy Solutions for Multifamily Homes, and Low-Income Solutions programs. A total of 26,099 energy efficiency measures were installed, just over half of which were *air sealing* or *duct sealing*.

Table 256. PY2024 Consistent Weatherization Measures Received—All Programs

Measure type	Measure description	Participants*	Measure quantity
Appliance	Advanced power strip	1,198	1,511
Domestic hot water	Faucet aerator	842	1,677
	Low-flow showerhead	726	950
Envelope	Air sealing	4,969	4,981
	Ceiling insulation	2,777	2,892
HVAC	Air conditioner tune-up	3,039	3,284
	Duct sealing	7,861	8,652
	Heat pump tune-up	1,259	1,361
	Smart thermostat	659	756
Lighting	LED	3	35
Total		**12,858**	**26,099**

* A participant may install measures across multiple measure categories. Thus, the total count of participants may not equal the sum of the counts by measure category.

Below, we highlight home energy audits and measures received by program participants within the Home Energy Solutions, Energy Solutions for Manufactured Homes, Energy Solutions for Multifamily Homes, and Low-Income Solutions programs.

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16.1.1 Home Energy Solutions Program

The Home Energy Solutions program helps single-family residential customers identify opportunities to improve their home's energy efficiency. Local home energy consultants work with customers to develop long-term, cost-effective energy savings by analyzing their energy use. Program participants receive home energy assessments conducted by a trained trade ally and direct installation of no-cost measures, including *LEDs, low-flow faucet aerators, low-flow showerheads, and advanced power strips (APS)*. When the home assessment results indicate additional energy-saving work could be performed on-site, contractors encourage customers to install premium efficiency upgrades and cost-effective *weatherization* measures, including *ceiling insulation, air infiltration, duct sealing*, *duct replacement*, *air conditioner and heat pump tune-ups*, and *smart thermostats*. The program offers incentives for these premium energy efficiency upgrades.

Table 257 highlights the Core program's types, quantities, and cost of *direct-install* and *weatherization* measures implemented under the Home Energy Solutions program. A total of 8,504 customers took part in the program, ultimately installing 15,809 energy-saving measures.

Table 257. PY2024 Consistent Weatherization Measures Installed—Home Energy Solutions Program

Measure category	Measure type	Participants*	Measure quantity	Incentive ($)
Domestic hot water	Faucet aerator	132	241	1,255
	Low-flow showerhead	129	168	2,755
Envelope	Air sealing	2,572	2,577	651,492
	Ceiling insulation	2,196	2,294	3,374,547
Appliances	Advanced power strip	699	926	27,780
HVAC	Air conditioner tune-up	2,565	2,800	700,000
	Duct sealing	4,625	5,356	3,934,873
	Heat pump tune-up	672	737	221,100
	Smart thermostat	579	675	166,418
Lighting	LED	3	35	105
Total		**8,504**	**15,809**	**9,080,325**

* A participant may install measures across multiple measure categories. Thus, the total count of participants may not equal the sum of the counts by measure category.

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A total of 1,215 Home Energy Solutions participants received a home energy audit, with nine on record for receiving two audits (897 *Tier 1 Audits* and 327 Tier *2 Audits*). All except 34 participants who received a *home energy audit* also installed at least one energy efficiency measure through the program, bringing the conversion rate (the ratio of *audits* to projects) to nearly 1:1. Approximately two energy-saving units were installed per participating customers on average. The program's cost[140] is estimated at $9,080,325 (including the cost associated with *smart thermostats—duplicate install to customer*, *energy audits,* and *DI Labor Fee to track additional incentive for contractors without savings*) across the 8,504 participating households throughout EAL's territory in PY2024, producing a total of 29,270 MWh and 9.9 MW in net savings. The average cost of the program was approximately $1,068 per participant.

Ultimately, 32 contractors conducted home *energy audits* or *installations* through the program. All the contractors installed at least one energy-efficiency measure type. All 32 contractors implemented *weatherization* measures; 16 of these 32 also implemented *direct-install* measures. All contractors that did weatherization work had Building Performance Institute (BPI)-certified team leads.

16.1.2 Energy Solutions for Manufactured Homes Program

The Energy Solutions for Manufactured Homes program provides cost-effective energy efficiency measures to manufactured home communities throughout EAL's service territory. After installing no-cost *direct-install* energy efficiency measures in participating customers' homes, program technicians provide an *audit* of the home to provide property owners and residents details about additional energy-saving opportunities. If additional energy-saving work could be performed on the site, contractors encourage customers to install premium efficiency upgrades and cost-effective *weatherization* measures, including *air conditioner and heat pump tune-ups*, *air sealing*, *duct sealing,* and *smart thermostats*. The program offers incentives for these premium energy efficiency upgrades.

Table 258 highlights the types and quantities of Core program *direct-install* and *weatherization* measures implemented under the Energy Solutions for Manufactured Homes program. A total of 563 customers took part in the program, ultimately installing 1,096 energy-saving units.

Table 258. PY2024 Consistent Weatherization Measures Received—Energy Solutions for Manufactured Homes Program

Measure category	Measure type	Participants*	Measure quantity	Incentive ($)
Domestic hot water	Faucet aerator	57	140	714
	Low-flow showerhead	54	73	1,100
Envelope	Air sealing	211	212	72,621
Appliances	Advanced power strip	57	64	1,920

[140] The program's cost is estimated based on the *Total Incentive Amount* per installed measure as reported by the program's tracking database.

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Measure category	Measure type	Participants*	Measure quantity	Incentive ($)
HVAC	Air conditioner tune-up	162	162	40,500
	Duct sealing	419	420	494,079
	Heat pump tune-up	20	20	6,000
	Smart thermostat	5	5	1,269
Total		**563**	**1,096**	**618,204**

* A participant may install measures across multiple measure categories. Thus, the total count of participants may not equal the sum of the counts by measure category.

A total of 45 Energy Solutions for Manufactured Homes participants received a home *energy audit* (17 *Tier 1 Audits* and 28 *Tier 2 Audits*). All participants who received a home *energy audit* also installed at least one energy efficiency measure through the program, bringing the conversion rate (the ratio of *audits* to projects) to 1:1. Approximately two energy-saving units were installed per participating customer, on average. The program's cost[141] is estimated at $618,204 (including the cost associated with *energy audit* and *DI Labor Fee to track additional incentive for contractors without savings*) across the 563 participating households throughout EAL's territory in PY2024, producing a total of 4,525 MWh and 0.6 MW in net savings. The average cost of the program was approximately $1,098 per participant.

Ultimately, 26 contractors conducted home *energy audits* and *installations* through the program. All contractors installed at least one energy-efficiency measure. All contractors implemented *weatherization* measures, and 12 also implemented *direct-install* measures. All contractors that did weatherization work had BPI-certified team leads.

16.1.3 Energy Solutions for Multifamily Homes Program

The Energy Solutions for Multifamily Homes program provides cost-effective energy efficiency measures to multifamily residences with at least five units. After installing no-cost energy efficiency measures in units of participating customers, program contractors provide energy audits to multifamily property owners with details about additional energy-saving opportunities. If additional energy-saving work could be performed on the site, contractors encourage customers to install premium efficiency upgrades and cost-effective *weatherization* measures, including *commercial* and *residential air conditioner tune-ups, heat pump tune-ups*, *air sealing*, *duct sealing,* and *commercial Wi-Fi thermostats*. The program offers incentives for these premium energy efficiency upgrades.

Table 259 highlights the types and quantities of the Core program *direct-install* and *weatherization* measures implemented under the Energy Solutions for Multifamily Homes program. A total of 2,025 participants took part in the program, ultimately installing 4,436 energy-saving units.

[141] The program's cost is estimated based on the *Total Incentive Amount* paid per installed measure as reported by the program's tracking database.

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Table 259. PY2024 Consistent Weatherization Measures Received—Energy Solutions for Multifamily Homes Program

Measure category	Measure type	Participants*	Measure quantity	Incentive ($)
Domestic hot water	Faucet aerator	318	557	3,183
	Low-flow showerhead	243	290	4,090
Envelope	Air sealing	1,210	1,215	355,513
	Ceiling insulation	119	122	98,634
Appliances	Advanced power strip	184	184	5,520
HVAC	Air conditioner tune-up	165	175	30,870
	Duct sealing	1,445	1,477	736,785
	Heat pump tune-up	365	402	73,850
	Smart thermostat	14	14	3,496
Total		**2,025**	**4,436**	**1,311,941**

* A participant may install measures across multiple measure categories. Thus, the total count of participants may not equal the sum of the counts by measure category.

A total of 27 Energy Solutions for Multifamily Homes participants received a home *energy audit* (16 *Tier 1 Audits* and 11 *Tier 2 Audits*). All participants who received a home *energy audit* also installed at least one energy efficiency measure through the program, bringing the conversion rate (the ratio of *audits* to projects) to 1:1. Approximately two energy-saving units were installed per participating customer, on average. The program's cost[142] is estimated at $1,311,941 (including the cost associated with *energy audits* and *DI Labor Fee to track additional incentive for contractors without savings*) across the 2,025 participating households throughout EAL's territory in PY2024, producing a total of 10,030 MWh and 1.4 MW in net savings. The average cost of the program was approximately $648 per participant.

Ultimately, 21 contractors conducted home *energy audits* and *installations* through the program. All contractors installed at least one energy-efficiency measure. Twenty contractors implemented *weatherization* measures; nine also installed *direct-install* measures. All contractors that did weatherization work had BPI-certified team leads.

[142] The program's cost is estimated based on the *Total Incentive Amount* paid per installed measure as reported by the program's tracking database.

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16.1.4 Low-Income Solutions Program

The Low-Income Solutions program helps low-income households become more comfortable, safe, and energy-efficient through *home weatherization* and *health and safety upgrades* at no cost to customers. The Low-Income Solutions program also helps with home repairs to correct minor problems that may otherwise prevent the building from receiving *weatherization* upgrades or pose a *health or safety* risk. As part of the Low-Income Solutions program, EAL offers the following services at no cost to qualifying customers: *home energy assessments* by qualified field technicians, *LEDs*, *low-flow showerheads*, *faucet aerators* (for kitchens and bathrooms), and *APSs*. EAL also offers the following measures at no cost to the customer: *air sealing*, *duct sealing*, *ceiling insulation*, *air conditioner and heat pump tune-ups, and smart thermostats*. Table 260 highlights the types and quantities of the Core program *direct-install* and *weatherization* measures implemented under the Low-Income Solutions program. A total of 1,859 eligible participants took part in the program, ultimately installing 4,758 energy-saving units.

Table 260. PY2024 Consistent Weatherization Measures Received Low-Income Solutions Program

Measure category	Measure type	Participants*	Measure quantity	Incentive ($)
Domestic hot water	Faucet aerator	335	739	4,131
	Low-flow showerhead	300	419	6,360
Envelope	Air sealing	976	977	235,024
	Ceiling insulation	462	476	601,431
Appliances	Advanced power strip	258	337	10,110
HVAC	Air conditioner tune-up	147	147	36,670
	Duct sealing	1,373	1,399	971,553
	Heat pump tune-up	202	202	44,475
	Smart thermostat	62	62	15,576
Total		**1,859**	**4,758**	**1,925,330**

* A participant may install measures across multiple measure categories. Thus, the total count of participants may not equal the sum of the counts by measure category.

Table 261 shows the types and quantities of the Core program *health and safety* measures implemented under the Low-Income Solutions program. A total of 1,342 participants, 72 percent, received *health and safety* measures out of 1,859 total program participants. The average cost per customer that installed *health and safety* measures was $239.

Table 261. PY2024 Consistent Weatherization Health and Safety Measures Received Low-Income Solutions Program

Measure description	Health and safety incentives spent ($)	Percentage of health and safety incentives spent	Quantity installed
Battery	$330	0.10%	121
Capping unvented gas wall heater	$250	0.08%	1
CO/smoke detector	$81,785	25.55%	1295

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Measure description	Health and safety incentives spent ($)	Percentage of health and safety incentives spent	Quantity installed
Dryer vent (cleaning/repair)	$124,012	38.75%	622
Drywall repair	$1,300	0.41%	7
Duct repair/replacement	$4,045	1.26%	10
Electrical repairs	$3,050	0.95%	10
Flue repair/replacement	$3,316	1.04%	15
HVAC system repairs	$8,193	2.56%	27
HVAC coolant addition > 1 lb	$967	0.30%	4
Kitchen/bathroom exhaust fan	$62,250	19.45%	188
Other	$7,697	2.40%	25
Plumbing repair	$825	0.26%	3
Ventilation	$21,800	6.81%	65
Window/door repair/replacement	$250	0.08%	1
Total	**$320,071**	**100.00%**	**2,394**

A total of 150 Low-Income Solutions participants received a home *energy audit* (133 *Tier 1 Audits* and 17 *Tier 2 Audits*). All but five participants who received a home *energy audit* also installed at least one energy efficiency measure through the program, bringing the conversion rate (the ratio of *audits* to projects) to nearly 1:1. Approximately two and a half energy-saving units were installed per participating customer, on average. The program's cost[143] is estimated at $1,925,330 (including the cost associated with *smart thermostats—duplicate install to customer*, *energy audits*, *DI Labor Fee to track additional incentive for contractors without savings*, and *health and safety* measures) across the 1,859 participating households throughout EAL's territory in PY2024, producing a total of 7,675 MWh and 1.8 MW in net savings. The average cost of the program was approximately $1,036 per participant.

Ultimately, 20 contractors conducted home *energy audits* and *installations* through the program. All 20 contractors installed at least one energy-efficient measure type. All implemented *audit* or *weatherization* measures, and 11 contractors also installed *direct-install* measures. All contractors that performed weatherization work had BPI-certified team leads. Contractors who work in the Low-Income Solutions program also have Healthy Homes Certification from BPI.

16.2 ACT 1102

To meet the objectives outlined in Act 1102, EAL launched the Low-Income Energy Solutions program in PY2020 and continued to implement the program in PY2024. The program is designed to serve low-income (defined as Low-Income Home Energy Assistance Program (LIHEAP)-eligible) and/or seniors (defined as 65 and older).

[143] The program's cost is estimated based on the *Total Incentive Amount* paid per installed measure as reported by the program's tracking database.

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16.2.1 Key Findings

The Low-Income Solutions program fully meets Act 1102 objectives, with roughly 85 percent of participants being LIHEAP-eligible and/or 65 years of age; households must be in one of the two categories to qualify to participate in the Low-Income Solutions program.

At the same time, it is important to note that the other three existing programs—Home Energy Solutions, Energy Solutions for Manufactured Homes, and Energy Solutions for Multifamily Homes—also continue to serve residential households to meet Act 1102 objectives.

16.2.2 Methodology Overview

Act 1102 information in this section is based on the results from BY2023 process evaluation participant surveys conducted for the Home Energy Solutions, Low-Income Solutions, Energy Solutions for Manufactured Homes and Energy Solutions for Multifamily Homes programs.

Table 262 provides the number of completed process evaluation surveys for EAL's four residential programs that directly serve customers' homes. A total of 175 surveys were completed in 2023 to evaluate Act 1102 eligibility.[144]

Table 262. BY2023 Surveys in Residential Programs (Excluding Upstream Programs)

Program	Completed process surveys
Home Energy Solutions	72
Energy Solutions for Manufactured Homes	27
Energy Solutions for Multifamily Homes	35
Low-Income Solutions	41
Total	**175**

Combining data collected on household size and income, the EM&V team generated an estimate of the number and share of survey respondents eligible for assistance under LIHEAP. To do so, the EM&V team utilized a table of LIHEAP-eligibility cutoffs contained in Table 263, where LIHEAP eligibility is determined through a combination of household size and household income.

Table 263. Income and Household Size Cutoffs to Determine LIHEAP Eligibility[145]

Household size	Annual income
1	$21,870
2	$29,580
3	$37,290
4	$45,000

[144] Survey respondents were those in the household that were most knowledgeable of the details of and the overall experience from participation in residential program offerings.

[145] LIHEAP eligibility is reported for the 2023 bridge year, when the most recent Act 1102 surveys were conducted. For households with more than eight people, $7,710 per additional person was added.

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Household size	Annual income
5	$52,710
6	$60,420
7	$68,130
8	$75,840

16.2.3 Program-Level Results

Below, we summarize program participant information for the Low-Income Solutions, Home Energy Solutions, Energy Solutions for Manufactured Homes, and Energy Solutions for Multifamily Homes programs. Consistent with guidance from the independent evaluation monitor, the most recent (BY2023) process evaluation survey results have been applied to each program's total number of participants in PY2024. The survey results are used to estimate the number of program participants falling into (1) age, (2) income, and (3) LIHEAP eligibility bins to determine the approximate total number of participants falling within each respective bin.

16.2.3.1 Low-Income Solutions Program

This program targets low-income households eligible for LIHEAP or EAL customers aged 65 or older. In PY2024, the program incentivized *ceiling insulation*, *air infiltration*, *duct sealing*, *air conditioner and heat pump tune-ups,* and *smart thermostat* measures while providing direct installation of *faucet aerators*, *low-flow showerheads*, *APSs*, and *lighting* measures at no cost to the customers.

Table 264 highlights key demographic information for participants. The EM&V team applied process survey responses and demographic information from the Department of Housing and Urban Development (HUD) to estimate the resulting shares of participants falling into age, income, and LIHEAP eligibility bins.

Based on the survey conducted in BY2023, around 36 percent of survey respondents were aged 65 or older, and approximately 54 percent were identified as being eligible for LIHEAP benefits. Overall, the EM&V team estimated Low-Income Solutions program eligibility through LIHEAP status and/or age within the household for 71 percent of PY2024 participants; at least 664 participants were 65 or older, and approximately 998 participants were eligible for LIHEAP benefits.

Table 264. PY2024 Demographic Information—Low-Income Solutions Program

Respondent characteristic		Percentage*	Participants
Respondent age	18–24	2.4%	45
	25–34	11.9%	221
	35–44	23.8%	442
	45–54	11.9%	221
	55–64	14.3%	266
	65 or older	35.7%	664
	Participants (n)		**1,859**

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Respondent characteristic		Percentage*	Participants
LIHEAP status	LIHEAP-eligible	53.7%	998
	Not LIHEAP-eligible	46.3%	861
	Participants (n)		**1,859**

*Percentage from BY2023 process surveys, follow-up surveys, and HUD data.

16.2.3.2 Home Energy Solutions Program

Home Energy Solutions helps single-family residential customers analyze their energy use and identify opportunities to improve their homes' energy efficiency. Program participants receive home *energy assessments* conducted by a trained trade ally and *direct installation* of low-cost measures, including *LEDs*, *low-flow faucet aerators*, *low-flow showerheads*, and *APSs*. When the home assessment results indicate additional energy-saving work could be performed at the site, contractors encourage customers to install premium efficiency upgrades and cost-effective *weatherization* measures, including *ceiling insulation*, *air infiltration*, *duct sealing* or *duct replacement*, *air conditioner and heat pump tune-ups* and *smart thermostat* measures.

Table 265 highlights key demographic information for the Home Energy Solutions program participants. The EM&V team applied BY2023 process survey responses and the resulting shares of respondents falling into age, income, and LIHEAP-eligibility bins to determine the approximate total number of participants falling within each respective bin. In PY2024, approximately 34 percent of Home Energy Solutions participants were aged 65 or older, or 2,874 participants. Approximately 71 percent of participants were LIHEAP-eligible, resulting in an estimated 6,021 participants for PY2024.

Table 265. PY2024 Demographic Information—Home Energy Solutions

Respondent characteristic		Percentage*	Participants
Respondent age	25–34	9.9%	842
	35–44	16.9%	1,437
	45–54	22.5%	1,914
	55–64	16.9%	1,437
	65 or older	33.8%	2,874
	Participants (n)		**8,504**
LIHEAP status	LIHEAP-eligible	70.8%	6,021
	Not LIHEAP-eligible	29.2%	2,483
	Participants (n)		**8,504**

*Percentages from BY2023 process surveys.

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16.2.3.3 Energy Solutions for Manufactured Homes Program

The Energy Solutions for Manufactured Homes program provides cost-effective energy efficiency measures to manufactured home communities throughout EAL's service territory. After installing no-cost *direct-install* energy efficiency measures in participating customers' homes, program technicians provide an audit of the home to provide property owners and residents details about additional energy-saving opportunities. If additional energy-saving work could be performed on-site, contractors encourage customers to install premium efficiency upgrades and cost-effective *weatherization* measures, including *air conditioner and heat pump tune-ups*, *air sealing*, *duct sealing* and *smart thermostats*. The program offers incentives for these premium energy efficiency upgrades.

Table 266 highlights key demographic information for Energy Solutions for Manufactured Homes program participants. The EM&V team applied BY2023 process survey responses and the resulting shares of respondents falling into age, income, and LIHEAP-eligibility bins to determine the approximate total number of participants falling within each respective bin. In PY2024, approximately 36 percent (205 participants) of Energy Solutions for Manufactured Homes participants were aged 65 or older, and approximately 46 percent were eligible for LIHEAP benefits (261 participants).

Table 266. PY2024 Demographic Information—Energy Solutions for Manufactured Homes Program

Respondent characteristic		Percentage*	Participants
Respondent age	18–24	6.1%	34
	25–34	15.2%	85
	35–44	24.2%	136
	45–54	12.1%	68
	55–64	6.1%	34
	65 or older	36.4%	205
	Participants (n)		**563**
LIHEAP status	LIHEAP eligible	46.4%	261
	Not LIHEAP eligible	53.6%	302
	Participants (n)		**563**

*Percentages are estimated from BY2023 process surveys.

16.2.3.4 Energy Solutions for Multifamily Homes Program

The Energy Solutions for Multifamily Homes program provides cost-effective energy efficiency measures to multifamily residences with at least five units. After installing no-cost energy efficiency measures in units of participating customers, program technicians provide energy audits to multifamily property owners with details about additional energy-saving opportunities. When additional energy-saving work could be performed on-site, contractors encourage customers to install premium efficiency upgrades and cost-effective *weatherization* measures, including *ceiling insulation*, *air conditioner* and *heat pump tune-ups*, *air sealing*, and *duct sealing*. The program offers incentives for these premium energy efficiency upgrades.

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Table 267 highlights key demographic information for the Energy Solutions for Multifamily Homes program participants. The EM&V team applied BY2023 process survey responses and the resulting shares of respondents falling into age, income, and LIHEAP-eligibility bins to determine the approximate total number of participants falling within each respective bin. In PY2024, approximately 31 percent of Energy Solutions for Multifamily Homes participants were aged 65 or older (623 participants), and 50 percent were eligible for LIHEAP benefits (1,012 participants).

Table 267. PY2024 Demographic Information—Energy Solutions for Multifamily Homes

Respondent characteristic		Percentage*	Participants
Respondent age	25–34	11.5%	234
	35–44	15.4%	312
	45–54	26.9%	545
	55–64	15.4%	312
	65 or older	30.8%	623
	Participants (n)		**2,025**
LIHEAP status	LIHEAP-eligible	50.0%	1,012
	Not LIHEAP-eligible	50.0%	1,012
	Participants (n)		**2,025**

*Percentages are estimated from BY2023 process surveys.

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17.0 NON-ENERGY BENEFITS

The key measure of success for electric energy efficiency programs is the direct savings achieved in energy (kilowatt-hours, kWh) and demand (kilowatts, kW). However, the energy efficiency industry recognizes that other benefits related to the implementation of these measures exist. These additional benefits can include reductions in maintenance, water usage, wastewater needs, fossil fuel consumption, arrearages, terminations and reconnections, cooling loads due to the reduced heat inputs, and potentially even insurance premiums. These benefits can account for increases in health, safety, comfort, property values, and even productivity.

In 2015, the Arkansas Public Service Commission issued a directive to the independent evaluation monitor to establish an approach for quantifying non-energy benefits (NEB) in cases where they are material and quantifiable. The Arkansas Technical Reference Manual (TRM) Evaluation, Measurement, and Verification (EM&V) Protocol L (Protocol L) provides a framework and orientation for quantifying benefits not included under standard forms of EM&V savings calculations. Sections of Protocol L identify three types of NEB calculations:

- *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 (ADRC).

Protocol L1: NEBs for Electricity, Natural Gas, and Liquid Propane

Measures installed through Entergy Arkansas, LLC's (EAL) energy efficiency programs may generate savings for multiple fuel types. NEBs are calculated for *other fuels* (i.e., not electricity) not supplied by EAL when the EM&V team can identify them, and gas utilities cannot claim the savings. Projects delivered jointly through EAL and gas utilities cannot provide other fuel NEBs to EAL, as the respective gas utility already claims gas savings. These other fuels typically include natural gas and propane.[146] Such calculations multiply the additional benefits of other fuels by the present value of the avoided cost-per-unit energy savings. The analysis of *other fuel NEBs* uses the following equation:

$$Benefit = Energy\ Savings \times Avoided\ Other\ Fuel\ Costs$$

Where:

Benefit = *avoided economic costs per unit of energy savings of the other fuel savings over the lifetime of the measure, expressed in current dollars*

Energy savings = *annual number of other fuel kilowatt-hours, therms, or gallons of propane saved per measure installed*

Avoided costs = *present value of the avoided cost-per-unit energy saving.*

[146] Propane savings = therm savings * 1.1.

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Protocol L2: NEBs for Water Savings

Some energy efficiency measures reduce water and wastewater consumption. NEBs calculations for *water savings* use an algorithm to estimate the value of avoided water and wastewater consumption due to measures installed in energy efficiency programs. Program year (PY) 2024 (PY2024) marginal water rates were $0.00984 (residential) and $0.00957 (commercial) per gallon.[147] The EM&V team multiplied projects' total gallons by these rates to obtain total avoided costs.

The calculation of avoided costs resulting from *water savings* uses the following equation:

$$Benefit = Water\ Savings \times Avoided\ Water\ Costs$$

Where:

Benefit = *avoided cost of water and water savings (per gallon) over the lifetime of the measure, expressed in current dollars*

Water savings = *annual number of gallons saved per measure installed*

Avoided water costs = *present value of the avoided costs-per-unit energy saving.*

Protocol L3: NEBs of Avoided and Deferred Equipment Replacement Costs

The EM&V team quantified ADRCs by estimating the future value of the current price of not replacing a less energy-efficient piece of equipment with a more energy-efficient piece of equipment. This calculation accounts for the disparity between the estimated useful life (EUL) of baseline measures and their more efficient replacements. There are two main types of ADRCs: *replace-on-burnout (ROB)* and *early replacement (ER)*; many of the NEBs identified for each measure in EAL's portfolio fall under the *ER* category.

17.1 CALCULATION INPUTS

The NEBs calculations for EAL's 2024 energy efficiency portfolio use the static inputs presented in Table 268. Where appropriate, prices have been updated to 2024 dollars using a compounding annual inflation rate of 2.00 percent.

Table 268. PY2024 Static Non-Energy Benefit Parameters

Parameter	Value	Source
Nominal discount rate	6.49%	EAL
Inflation rate	2.00%	EAL
Real discount rate	4.40%	Equation 4
Propane	$2.52 per gallon	Arkansas TRM 9.2 (2024 dollars)
Natural gas	$0.33 per therm	Summitt PY2022 Annual Report (2024 dollars)
Water (residential)	$0.00984 per gallon	TRM 9.2

[147] Arkansas TRM 9.2, Volume 1: Section L2, Table 9.

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Parameter	Value	Source
Water (commercial)	$0.00957 per gallon	TRM 9.2
Water (unknown)	$0.00971 per gallon	TRM 9.2
Net-to-gross (NTG) ratio	Variable by program and measure	EM&V team research

Equation 4. Real Discount Rate

$$RDR = \frac{(0.0649 - 0.0200)}{(1 + 0.0200)} = 0.0440$$

Equation 5. Compound Interest

$$Price_{2024} = Price_y \left(1 + \frac{i}{(2024 - y)}\right)^{2024-y}$$

Where:

$Price_y$ = *original price in year y*

i = *inflation rate*

y = *year corresponding to original price*

The EM&V team employed algorithms defined in TRM 9.2 for each measure and NEB category. The EM&V team adapted the Excel-based calculator created by the Parties Working Collaboratively (PWC). Using this calculator, the EM&V team estimated the avoided and deferred replacement costs of installed measures under TRM 9.2.

17.2 IDENTIFICATION OF NON-ENERGY BENEFITS IN THE PY2024 PORTFOLIO

Using data extracts from the tracking system,[148] the EM&V team identified energy-efficient measures offered to customers through EAL's portfolio of energy-efficiency programs and determined which type(s) of NEBs were attributable to each measure. Table 269 and Table 270 summarize EAL's PY2024 portfolio measures and NEBs the EM&V team calculated for each measure. The table also provides the relevant TRM subsection for each measure used to calculate primary energy impacts and NEBs.

Table 269. Non-Energy Benefits by Measure (Residential Sector)

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs	TRM 9.2, Vol. 2 subsection
Advanced power strips				2.6.1
Air conditioner tune-up				2.1.5

[148] Files for analysis were downloaded in February and March 2024 and contain finalized PY2024 data.

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Measure	Water reduction	Other fuel	Avoided/deferred replacement costs	TRM 9.2, Vol. 2 subsection
Air infiltration		✓		2.2.9
Ceiling insulation		✓		2.2.2
Duct sealing—air conditioner (AC) with resistance heat				2.1.11
Duct sealing—electric cooling		✓		2.1.11
Duct sealing—heat pump				2.1.11
Duct sealing electric resistance no cooling				2.1.11
Efficient hot water heaters				2.3.1
ENERGY STAR® dehumidifiers				2.4.4
ENERGY STAR freezers				N/A
ENERGY STAR directional light-emitting diode (LED)		✓	✓	2.5.1
ENERGY STAR omnidirectional LEDs		✓	✓	2.5.2
ENERGY STAR pool pumps				2.6.2
ENERGY STAR room air-cleaners				2.4.5
ENERGY STAR window AC replacement				2.1.10
Faucet aerators	✓	✓		2.3.4
Hard-wired LED fixtures		✓	✓	2.5.2
Heat pump tune-up				2.1.5
Low-flow showerheads	✓	✓		2.3.5
Smart thermostats		✓		2.1.12
Variable frequency drive				N/A

Table 270. Non-Energy Benefits by Measure (Commercial Sector)

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs	TRM 9.2, Vol. 2 subsection
Commercial AC/HP tune-up				3.1.6
Commercial door air infiltration		✓		3.2.10
Commercial showerheads	✓	✓		3.3.5
Commercial Wi-Fi thermostats		✓		N/A
Continuous energy improvement		✓		N/A
Custom—heating and cooling		✓		N/A

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Measure	Water reduction	Other fuel	Avoided/deferred replacement costs	TRM 9.2, Vol. 2 subsection
Custom—non-heating and cooling		✓		N/A
Custom controls		✓		N/A
Custom—non-lighting		✓		N/A
Electronically commutated motors for refrigeration				3.4.1
Evaporator fan controls				3.7.10
Faucet aerators	✓	✓		3.3.2
Halogens				3.6.3
High-efficiency battery chargers				3.9.6
High-intensity discharge (HID) lamps		✓	✓	3.6.3
Integrated-ballast compact fluorescent lamps (CFL)		✓	✓	3.6.3
Integrated-ballast LED lamps		✓	✓	3.6.3
LEDs		✓	✓	3.6.3
Lighting controls		✓		3.6.2
Low-flow pre-rinse spray valves	✓			3.7.12
Low-flow showerheads	✓			3.3.5
Magnetic ballast T5 or premium T8 retrofit of T12		✓	✓	3.6.3
Midstream: exterior fixtures			✓	3.6.3
Midstream: interior fixtures		✓	✓	3.6.3
Midstream: interior lamps		✓	✓	3.6.3
Modular CFLs and cold cathode fluorescent lamp (CCFL)		✓	✓	3.6.3
Occupancy-based PTHP/PTAC controls (packaged terminal heat pump/packaged terminal air conditioner)		✓		3.1.14
Other linear fluorescents		✓	✓	3.6.3
Refrigeration door gaskets				3.5.7
Refrigeration strip curtains				3.5.6
Unitary and split system AC/HP equipment				3.1.16
Variable frequency drives				N/A
Water-chilling equipment—air-cooled				3.1.17

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Measure	Water reduction	Other fuel	Avoided/deferred replacement costs	TRM 9.2, Vol. 2 subsection
Water-chilling equipment—water-cooled centrifugal				3.1.17
Zero energy doors				3.5.8

17.3 NON-ENERGY BENEFITS METHODOLOGIES

Below, we describe the methodologies used by the EM&V team to calculate savings associated with three primary categories of NEBs: ADRCs (associated with *lighting* measures), NEBs for *water savings*, and NEBs for *other fuels*. Note that all NEB calculations are at the program-measure level for which the EM&V team conducted NTG research. To ensure that we present net NEBs in the final results, we multiply the calculations detailed below by NTG ratios at the program-by-measure level.

17.3.1 Avoided and Deferred Replacement Costs: Lighting Measures

Installed energy-efficient *lighting* may have a longer EUL than the inefficient/baseline equipment it replaced. Customers avoid replacing the technology that would have been present absent the efficient equipment over the efficient equipment's lifetime (*avoided replacement costs*). When customers replace energy-using equipment before the end of its functional life, this ER accelerates the replacement cycle, deferring the replacement of baseline equipment (*deferred replacement costs*).

Participants in energy efficiency programs can receive energy-efficient *lighting* technologies. Typically, these technologies have longer-rated lives than the baseline technologies they replace. This longevity affords the customer savings in replacement costs they would have incurred in the program's absence. Therefore, efficient *lighting* technology comes with savings from avoided replacement. The extent of these savings depends on the baseline *lighting* technology replaced and the efficient technology's lifetime replacing it. Commercial customers currently have deferred replacement costs based on baseline *lighting* technologies before replacement with efficient lighting.

17.3.1.1 Deferred Replacement Cost Equations

Equations below detail the deferred replacement costs for ER and ROB projects. Equation 6 and Equation 7 below relate to deferred replacement costs associated with efficient *lighting* technologies with static baseline technologies.

Equation 6. Deferred Replacement Cost—Replace-on-Burnout—Static Baseline

$$ROB_{Static} = \left\{ \frac{1 - [(1 + RDR)^{EUL_{base} - EUL_{eff}}]}{[(1 + RDR)^{EUL_{base}}] - 1} \right\} * Cost_{base}$$

Equation 7. Deferred Replacement Cost—Early Retirement—Static Baseline

$$ER_{Static} = \left\{ \frac{[(1 + RDR)^{EUL_{base} - RUL_{base}} - (1 + RDR)^{EUL_{base} - EUL_{eff}}]}{[(1 + RDR)^{EUL_{base}}] - 1} \right\} * Cost_{base}$$

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Inputs contained in the above equations correspond with the following:

$RDR = real\ discount\ rate$, corresponding with Equation 4.

Where:

$BaselineLifeHours$ corresponds with the rated life in hours associated with the baseline lighting technology.

$EfficientLifeHours$ corresponds with the rated life in hours associated with efficient lighting technology.

$$RUL_{base} = \frac{EUL_{base}}{3}$$

$Cost_{Base}$ corresponds to the total replacement costs for the baseline lighting technology.

17.3.1.2 Commercial Lighting

The EM&V team's methodologies used to determine deferred replacement costs for commercial projects are detailed below. The EM&V team worked with CLEAResult to understand the tracking system inputs and how they relate to deferred replacement cost calculations for each commercial project. Table 271 highlights *lighting* assumptions used by CLEAResult and the EM&V team for *commercial lighting* projects. For *commercial lighting* projects, replacement costs are broken into *indoor* or *outdoor* replacement costs within the table. We highlight how these parameters, alongside other parameters and assumptions, enter into the deferred replacement cost calculations below.

Table 271. PY2024 CLEAResult Measure Life and Fixture Cost by Fixture Type

Fixture type	Life (hours)	Material cost	Labor rate	Indoor hours	Outdoor hours	Indoor replacement costs	Outdoor replacement costs
CFL exit sign (self-ballasted pin)	10,000	$2.53	$59.83	0.08	0.08	$7.97	$7.97
CFL pin lamp	11,111	$7.42	$59.83	0.08	0.08	$13.17	$13.17
Integrated-ballast CFL lamp	10,000	$8.07	$59.83	0.08	0.08	$13.86	$13.86
Halogen	1,930	$4.21	$59.83	0.08	0.08	$9.75	$9.75
High-pressure sodium	33,429	$66.16	$70.71	0.25	0.50	$88.97	$107.73
Incandescent (use A-lamp)	2,722	$1.19	$59.83	0.08	0.08	$6.55	$6.55
Induction	100,000	$278.28	$70.71	0.25	0.50	$314.06	$332.83
LED exit sign	50,000	$15.63	$59.83	0.25	0.25	$32.46	$32.46
LED fixture	50,000	$280.86	$70.71	0.25	0.50	$316.81	$335.56

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Fixture type	Life (hours)	Material cost	Labor rate	Indoor hours	Outdoor hours	Indoor replacement costs	Outdoor replacement costs
Integrated-ballast LED lamp	20,000	$12.88	$59.83	0.08	0.08	$18.96	$18.96
LED tube lamp	50,000	$16.09	$59.83	0.08	0.08	$22.37	$22.37
Metal halide	14,000	$71.16	$70.71	0.25	0.50	$94.28	$113.04
Mercury vapor	14,000	$108.33	$70.71	0.25	0.50	$133.71	$152.47
Non-high-output T5 lamp	19,500	$20.04	$59.83	0.08	0.08	$26.55	$26.55
High-output T5 lamp	28,500	$20.42	$70.71	0.25	0.50	$40.42	$59.18
T12 (assume the same as T8)	27,000	$26.92	$59.83	0.08	0.08	$33.85	$33.85
CEE T8	28,500	$14.93	$59.83	0.08	0.08	$21.14	$21.14

Baseline

Deferred replacement costs were computed using a static baseline. Depending on whether the project was ROB or ER, the EM&V team used Equation 6 (ROB) or Equation 7 (ER).

Early Retirement Versus Replace-on-Burnout

Deferred replacement cost calculations will differ based on whether the *lighting* project was ER or ROB. All *lighting* projects that are not *new construction* projects are *retrofits*. *Retrofit* projects in the tracking system explicitly assume that the ER of the baseline *lighting* technology took place when EAL conducted each project. The EM&V team presumed a remaining useful life equal to one-third of the baseline technology's EUL. The EM&V team used Equation 7 to determine deferred replacement costs associated with efficient lighting.

For *new construction efficient lighting* projects, these projects had the same assumptions as ROB. The EM&V team adopted CLEAResult's approach to determining the baseline technology that customers would have adopted in the absence of efficient *lighting*. Table 272 highlights the EM&V team's methodology for deciding the baseline *lighting* depending on the *new construction efficient lighting* technology. Equation 6 was used to determine the deferred replacement costs.

Table 272. PY2024 Baseline Lighting for New Construction Projects

Efficient lighting technology	Efficient wattage	Baseline lighting technology
LED fixture	Less than 26 W	One-lamp T8 fixture
LED fixture	Between 26 W and 59 W	Two-lamp T8 fixture
LED fixture	Greater than 60 W	HID—metal halide fixture
Integrated-ballast LED lamp	Any wattage	Integrated-ballast CFL lamp
LED tube lamp	Less than 26 W	One T8 lamp
LED tube lamp	Greater than 26 W	One T5 high-output lamp

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Efficient lighting technology	Efficient wattage	Baseline lighting technology
Generic fixture/lamp, exterior, not screw-in	Any wattage	Metal halide fixture/lamp
Generic fixture/lamp, interior or exterior, not LED or induction	Any wattage	No baseline—no deferred replacement savings

17.3.2 Non-Energy Benefits for Water Savings

Some energy efficiency measures reduce water and wastewater consumption. Using TRM 9.2 Volume 2, the EM&V team followed TRM guidance to deem water savings associated with efficient measures for residential and commercial customers. The EM&V team measured water savings in gallons for the first year (PY2024) and the lifetime over which the efficient measure may remain installed. To quantify the monetary value of water NEBs, the EM&V team put first-year water savings in cost savings by multiplying changes in water consumption by their respective prices (contained in Table 268). PY2024 marginal water rates were calculated and set at $0.00984 (residential) and $0.00957 (commercial) per gallon. First-year savings were assumed to be repeated as an annual cash flow over the efficient measure's life. To determine lifetime savings in dollars, the EM&V team discounted this cash flow using a real discount rate of 4.04 percent (contained in Table 268).

17.3.3 Non-Energy Benefits for Other Fuels

Efficient measures occasionally generate savings for multiple fuel types. Conversely, efficient measures such as *lighting* can create a penalty for various fuel types, as heat output from efficient *lighting* is lower than that of baseline *lighting* technologies typically in place. This lower heat output requires more fuel consumption to maintain the same temperature at gas-heated sites.

NEBs for other fuels—including natural gas and propane—were computed for residential and commercial projects with fuel savings or penalties. The EM&V team followed TRM guidance to deem other fuel savings or penalties associated with efficiency measures. Other fuel savings or penalties were quantified only for the projects with fuel savings or penalties that gas utilities had not claimed.

The EM&V team measured other fuel savings (or penalties) in therms or gallons for the first year (PY2024) and the lifetime over which the efficient measure may remain installed. To quantify the monetary value of other fuel NEBs, first-year savings (or penalties) were calculated in terms of cost savings (or penalties) by multiplying changes in consumption of other fuels by their respective prices (contained in Table 268). First-year savings were assumed to be repeated as an annual cash flow over the efficient measure's life. To determine lifetime savings in dollars, the EM&V team discounted this cash flow using a real discount rate of 4.04 percent (contained in Table 268).

17.4 ESTIMATES OF NON-ENERGY BENEFITS IN THE PY2024 PORTFOLIO

Below we highlight the EM&V team's NEBs findings for BY2024 using the methodologies described above.

17.4.1 Home Energy Solutions

The Home Energy Solutions program offered 12 unique types of measures for PY2024. The EM&V team calculated water NEBs for *faucet aerators* and *low-flow showerheads*. Gas NEBs were calculated for all *lighting* measures, *air infiltration*, *ceiling insulation*, *duct sealing (with electric cooling)*, and *smart*

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thermostat measures. NEBs were categorized for all measures in this program as ER. Potential gas savings resulting from projects jointly delivered with a gas utility were excluded from EAL's NEBs estimates (see Table 273 through Table 277).

Table 273. Home Energy Solutions—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Advanced power strips			
Air conditioner tune-up			
Air infiltration		✓	
Ceiling insulation		✓	
Duct replacement—heat pump			
Duct sealing—AC with resistance heat			
Duct sealing—electric cooling		✓	
Duct sealing—heat pump			
Faucet aerators	✓		
Heat pump tune-up			
Low-flow showerheads	✓		
Smart thermostats		✓	

Table 274. Home Energy Solutions—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (net present value (NPV))
1,038,016	18,085,325	$342,545	$4,264,669

Table 275. Home Energy Solutions—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
304	5,465	$765	$9,791

Table 276. Home Energy Solutions—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
596,426	5,964,259	$5,869	$48,721

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Table 277. Home Energy Solutions—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$0

17.4.2 Energy Solutions for Multifamily Homes

The Energy Solutions for Multifamily Homes program offered 11 unique types of measures in PY2024. The EM&V team calculated water NEBs for *faucet aerators* and *low-flow showerheads*. We calculated gas NEBs for all *lighting* measures, *air infiltration*, *ceiling insulation*, *smart thermostats,* and *duct sealing with electric cooling* measures. NEBs for all measures in this program are categorized as ER (see Table 278 to Table 282).

Table 278. Multifamily Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Advanced power strips			
Air conditioner tune-up			
Air infiltration		✓	
Ceiling insulation		✓	
Duct sealing—AC with resistance heat			
Duct sealing—electric cooling		✓	
Duct sealing—heat pump			
Faucet aerators	✓		
Heat pump tune-up			
Low-flow showerheads	✓		
Smart thermostats		✓	

Table 279. Energy Solutions for Multifamily Homes—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
36,143	616,628	$11,927	$146,289

Table 280. Energy Solutions for Multifamily Homes—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

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Table 281. Energy Solutions for Multifamily Homes—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
1,069,053	10,690,530	$10,519	$87,329

Table 282. Energy Solutions for Multifamily Homes—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$0

17.4.3 Energy Solutions for Manufactured Homes

The Energy Solutions for Manufactured Homes program offered 10 unique types of measures in PY2024. The EM&V team calculated water NEBs for *faucet aerators* and *low-flow showerheads*. We calculated gas NEBs for all *lighting* measures, *air infiltration*, *duct sealing with electric cooling*, and *smart thermostat* measures. NEBs for all measures in this program as ER (see Table 283 to Table 287).

Table 283. Energy Solutions for Manufactured Homes—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Advanced strips			
Air conditioner tune-up			
Air infiltration		✓	
Duct sealing—AC with resistance heat			
Duct sealing—electric cooling		✓	
Duct sealing—heat pump			
Faucet aerators	✓		
Heat pump tune-up			
Low-flow showerheads	✓		
Smart thermostats		✓	

Table 284. Energy Solutions for Manufactured Homes—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
24,784	430,819	$8,179	$101,889

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Table 285. Energy Solutions for Manufactured Homes—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
597	9,999	$1,504	$18,218

Table 286. Energy Solutions for Manufactured Homes—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
263,843	2,638,426	$2,596	$21,553

Table 287. Energy Solutions for Manufactured Homes—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$0

17.4.4 Low-Income Solutions

The Low-Income Solutions program offered 13 unique types of measures in PY2024. The EM&V team calculated water NEBs for *faucet aerators* and *low-flow showerheads*; and calculated gas NEBs for all *lighting* measures, *air infiltration*, *ceiling insulation*, *duct sealing with electric cooling*, and *smart thermostat* measures (see Table 288 to Table 292).

Table 288. Low-Income Solutions—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Advanced power strips			
Air conditioner tune-up			
Air infiltration		✓	
Ceiling insulation		✓	
Duct replacement—heat pump			
Duct sealing—AC with resistance heat			
Duct sealing—electric cooling		✓	
Duct sealing—heat pump			
Duct sealing—electric resistance no cooling			
Faucet aerators	✓		
Heat pump tune-up			
Low-flow showerheads	✓		
Smart thermostats		✓	

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Table 289. Low-Income Solutions—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
254,985	4,397,695	$84,145	$1,039,244

Table 290. Low-Income Solutions—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 291. Low-Income Solutions—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
1,490,450	14,904,502	$14,666	$121,752

Table 292. Low-Income Solutions—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$0

17.4.5 Point of Purchase Solutions

The Point of Purchase Solutions program offered 16 unique types of measures (fifteen residential, three commercial) in PY2024. The EM&V team calculated gas NEBs for all *indoor lighting* measures, *air infiltration*, *duct sealing with electric cooling*, *weatherization*, and *smart thermostat* measures. We also calculated ADRCs for all *lighting* purchases (see Table 293 to Table 297).

Table 293. Point of Purchase Solutions—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Advanced power strips			
Appliance recycling—freezer			
Appliance recycling—refrigerator			
Bath aerator	✓		
Efficient hot water heaters			
ENERGY STAR dehumidifiers			
ENERGY STAR freezers			
ENERGY STAR pool pumps			
ENERGY STAR room air-cleaners			

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Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Advanced power strips			
Appliance recycling—freezer			
Appliance recycling—refrigerator			
Bath aerator	✓		
Kitchen aerator	✓		
LED night light			
Midstream: exterior fixtures			✓
Midstream: interior fixtures		✓	✓
Midstream: interior lamps		✓	✓
Smart thermostats		✓	
Weatherization		✓	

Table 294. Point of Purchase Solutions—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
4,281	-4,559	$1,413	$2,686

Table 295. Point of Purchase Solutions—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
250	2,749	$630	$5,638

Table 296. Point of Purchase Solutions—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
2,481	24,811	$24	$203

Table 297. Point of Purchase Solutions—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$527,235

17.4.6 Large Commercial and Industrial Solutions

The Large Commercial and Industrial Solutions program offered 30 types of measures in PY2024. The EM&V team calculated water NEBs for *commercial showerheads*, *faucet aerators*, and *low-flow pre-*

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rinse spray valves. We also calculated gas NEBs for all *interior lighting* projects, *CEI, smart thermostat, custom measures*, and *commercial door air infiltration* for gas heating sites. Finally, we calculated ADRCs for all *lighting* measures (see Table 298 to Table 302).

Table 298. Large Commercial and Industrial Solutions—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Commercial AC/HP tune-up			
Commercial door air infiltration		✓	
Commercial showerheads	✓		
Commercial Wi-Fi thermostats		✓	
Continuous energy improvement		✓	
Custom—heating and cooling		✓	
Custom—non-heating and cooling		✓	
Custom controls		✓	
Electronically commutated motors for refrigeration			
Engineering nozzles (compressed air)			
Evaporator fan controls			
Faucet aerators	✓		
Halogens		✓	✓
High-efficiency battery chargers			
High-intensity discharge (HID) lamps		✓	✓
Integrated-ballast CFL lamps		✓	✓
Integrated-ballast LED lamps		✓	✓
LEDs		✓	✓
Lighting controls		✓	
Low-flow pre-rinse spray valves	✓		
Magnetic ballast T5 or premium T8 retrofit of T12		✓	✓
Modular CFLs And CCFLs		✓	✓
Other linear fluorescents		✓	✓
Overhead door weather stripping			
PTAC sealing		✓	
Refrigeration door gaskets			
Refrigeration strip curtains			
Unitary and split system AC/HP equipment			

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Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Variable frequency drives			
Water-chilling equipment—air-cooled			
Water chilling equipment—water-cooled centrifugal			

Table 299. Large Commercial and Industrial Solutions—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
-120,155	-1,793,191	-$39,651	-$445,536

Table 300. Large Commercial and Industrial Solutions—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 301. Large Commercial and Industrial Solutions—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
760,061	6,797,866	$6,506	$54,007

Table 302. Large Commercial and Industrial Solutions—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$1,915,191

17.4.7 Small Business Solutions

The Small Business Solutions program offered 19 unique types of measures in PY2024. The EM&V team calculated water NEBs for *commercial showerheads* and *faucet aerators*. We calculated gas NEBs for all *interior lighting* projects, *commercial Wi-Fi thermostats*, and *commercial door air infiltration* sites with *gas* heating. Finally, we calculated ADRCs for *lighting* measures (see Table 303 to Table 307).

Table 303. Small Business Solutions—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Commercial AC/HP tune-up			
Commercial door air infiltration		✓	

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Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Commercial showerheads	✓		
Commercial Wi-Fi thermostats		✓	
Custom – non-heating and cooling			
Faucet aerators	✓		
Halogens		✓	✓
High-intensity discharge lamps		✓	✓
Integrated-ballast CFL lamps		✓	✓
Integrated-ballast LED lamps		✓	✓
LEDs		✓	✓
Lighting controls		✓	
Magnetic ballast T5 or premium T8 retrofit of T12		✓	✓
Modular CFLs and CCFLs		✓	✓
Other linear fluorescents		✓	✓
Overhead door weather stripping			
PTAC sealing			
Refrigeration door gaskets			
Refrigeration strip curtains			

Table 304. Small Business Solutions—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
-30,657	-458,013	-$10,117	-$113,753

Table 305. Small Business Solutions—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 306. Small Business Solutions—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
225,000	2,250,000	$2,153	$17,876

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Table 307. Small Business Solutions—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$918,020

17.4.8 Public Institutions Solutions

The Public Institutions Solutions program offered 21 unique types of measures in PY2024. The EM&V team calculated water NEBs for *faucet aerators* and gas NEBs for all *lighting* projects and *commercial door air infiltration, Wi-Fi thermostats, and custom* sites with *gas* heating. We also calculated ADRCs for *lighting* measures (see Table 308 to Table 312).

Table 308. Public Institutions Solutions—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Continuous energy improvement			
Commercial AC/HP tune-up			
Commercial Wi-Fi thermostats		✓	
Custom—heating and cooling		✓	
Custom—non-heating and cooling		✓	
Custom controls		✓	
Halogens		✓	✓
HID lamps		✓	✓
Integrated-ballast CFL lamps		✓	✓
Integrated-ballast LED lamps		✓	✓
LEDs		✓	✓
Lighting controls		✓	
Magnetic ballast T5 or premium T8 retrofit of T12		✓	✓
Modular CFLs and CCFLs		✓	✓
Other linear fluorescents		✓	✓
Overhead door weather stripping			
Refrigeration door gaskets			
Refrigeration strip curtains			
Unitary and split system AC/HP equipment			
Variable frequency drive			
Water-chilling equipment—water-cooled			

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Table 309. Public Institutions Solutions—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
-20,646	-299,308	-$6,813	-$74,645

Table 310. Public Institutions Solutions—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 311. Public Institutions Solutions—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 312. Public Institutions Solutions—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$977,900

17.4.9 Agricultural Energy Solutions

The Agricultural Energy Solutions program offered three measures in PY2024. The EM&V team calculated ADRCs for *lighting* measures (see Table 313 to Table 317).

Table 313. Agricultural Energy Solutions—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Custom lighting – new construction			✓
Custom lighting - retrofit			✓
Custom non-lighting			

Table 314. Agricultural Energy Solutions—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

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Table 315. Agricultural Energy Solutions—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 316. Agricultural Energy Solutions—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 317. Avoided and Deferred Replacement Costs—Agricultural Energy Solutions

Avoided and deferred replacement costs (NPV)
$166

17.4.10 Residential Direct Load Control

No NEBs were estimated for the Residential Direct Load Control program.

17.4.11 Smart Direct Load Control Pilot

The Smart Direct Load Control pilot offered two types of measures in PY2024. The EM&V team calculated gas NEBs for all residential and commercial *smart thermostat* projects at sites with *gas* heating (see Table 318 to

Table 322).

Table 318. Smart Direct Load Control Pilot—Measures and Potential Non-Energy Benefits

Measure	Water reduction	Other fuel	Avoided/deferred replacement costs
Commercial Wi-Fi thermostats		✓	
Smart thermostats		✓	

Table 319. Smart Direct Load Control Pilot—Gas Savings

First-year savings (therms)	Lifetime savings (therms)	First-year savings	Lifetime savings (NPV)
79,065	869,713	$26,091	$233,564

Table 320. Smart Direct Load Control Pilot—Propane Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

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Table 321. Smart Direct Load Control Pilot—Water Savings

First-year savings (gallons)	Lifetime savings (gallons)	First-year savings	Lifetime savings (NPV)
0	0	$0	$0

Table 322. Smart Direct Load Control Pilot—Avoided and Deferred Replacement Costs

Avoided and deferred replacement costs (NPV)
$0

17.4.12 Agricultural Irrigation Load Control

No NEBs were estimated for the Agricultural Irrigation Load Control program.

17.5 TOTAL NON-ENERGY BENEFITS IN THE PY2024 PORTFOLIO

Table 323 summarizes first-year *gas* and *water* NEBs, and Table 324 provides lifetime NEBs for each of EAL's programs, including totals for the EAL portfolio.

Table 323. PY2024 First-Year Non-Energy Benefits by Program

Program	Gas savings			Water savings		First-year total savings ($)
	First-year savings (therms)	First-year propane savings (gallons)	First-year savings ($)	First-year savings (gallons)	First-year savings ($)	
Home Energy Solutions	1,038,016	304	$343,310	596,426	$6,506	$349,816
Energy Solutions for Multifamily Homes	36,143	0	$11,927	1,069,053	$10,519	$22,447
Energy Solutions for Manufactured Homes	24,784	597	$9,683	263,843	$2,596	$12,279
Low-Income Solutions	254,985	0	$84,145	1,490,450	$14,666	$98,811
Point of Purchase Solutions	4,281	250	$2,042	2,481	$24	$2,067
Large Commercial and Industrial Solutions	-120,155	0	-$39,651	760,061	$6,506	-$33,146
Small Business Solutions	-30,657	0	-$10,117	225,000	$2,153	-$7,964
Public Institutions Solutions	-20,646	0	-$6,813	0	$0	-$6,813
Agricultural Energy Solutions	0	0	$0	0	$0	$0
Residential Direct Load Control	0	0	$0	0	$0	$0
Smart Direct Load Control Pilot	79,065	0	$26,091	0	$0	$26,091
Agricultural Irrigation Load Control	0	0	$0	0	$0	$0
Total	**1,265,814**	**1,151**	**$420,618**	**4,407,314**	**$42,971**	**$463,588**

Table 324. PY2024 Lifetime Non-Energy Benefits by Program

Program	Gas savings			Water savings		Avoided & deferred replacement cost (NPV)	Total savings (NPV)
	Lifetime savings (therms)	Lifetime propane savings (gallons)	Lifetime savings (NPV)	Lifetime savings (gallons)	Lifetime savings (NPV)		
Home Energy Solutions	18,085,325	5,465	$4,274,459	5,964,259	$48,721	$0	$4,323,180
Energy Solutions for Multifamily Homes	616,628	0	$146,289	10,690,530	$87,329	$0	$233,618
Energy Solutions for Manufactured Homes	430,819	9,999	$120,107	2,638,426	$21,553	$0	$141,660
Low-Income Solutions	4,397,695	0	$1,039,244	14,904,502	$121,752	$0	$1,160,996
Point of Purchase Solutions	-4,559	2,749	$8,324	24,811	$203	$527,235	$535,762
Large Commercial and Industrial Solutions	-1,793,191	0	-$445,536	6,797,866	$54,007	$1,915,191	$1,523,662
Small Business Solutions	-458,013	0	-$113,753	2,250,000	$17,876	$918,020	$822,143
Public Institutions Solutions	-299,308	0	-$74,645	0	$0	$977,900	$903,254
Agricultural Energy Solutions	0	0	$0	0	$0	$166	$166
Residential Direct Load Control	0	0	$0	0	$0	$0	$0
Smart Direct Load Control Pilot	869,713	0	$233,564	0	$0	$0	$233,564
Agricultural Irrigation Load Control	0	0	$0	0	$0	$0	$0
Total	**21,845,109**	**18,213**	**$5,188,052**	**43,270,394**	**$351,440**	**$4,338,513**	**$9,878,005**

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ENTERGY ARKANSAS, LLC

Arkansas Energy Efficiency Program Portfolio Annual Report

Docket No. 07-085-TF

2024 PROGRAM YEAR
May 1, 2025

Appendix D

Collateral for Entergy Arkansas, LLC Annual Report

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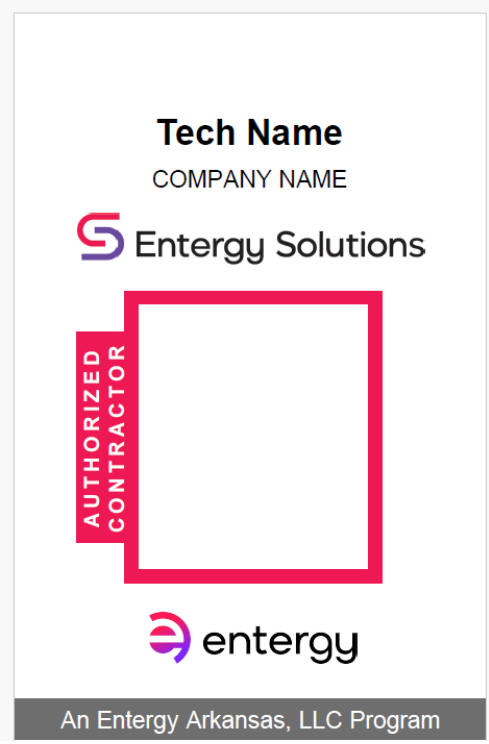
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1.Cross Programs

1.1 EAL Badge_MASTER TEMPLATE_RELEASE_x01.pdf



1.2 2024 EAL Branded Give Aways







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KINETIC 6 CAN COOLER
Imprint Area: 3.5"H x 5"W

23996745-2
Order#
Date: 11-10-22
To:
From: Christina Buehner x8844

4imprint
877.446.7746

Art Proof

DOTTED LINE WILL NOT APPEAR ON YOUR IMPRINTED ITEM

THIS ART PROOF SHOWS THE APPROXIMATE SIZE, COLOR AND PLACEMENT OF YOUR IMPRINT RELATIVE TO THE SIZE OF THE ITEM.

50% ACTUAL SIZE



ACTUAL SIZE



imprint color(s):
White

100% of actual size



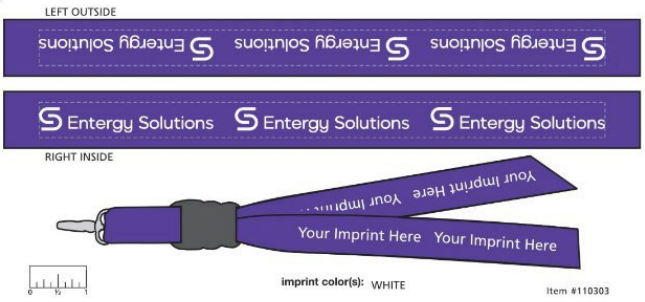
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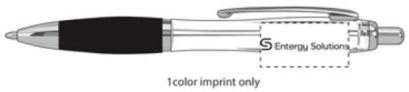








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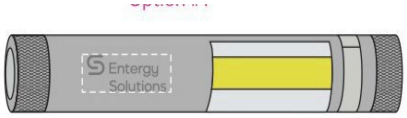
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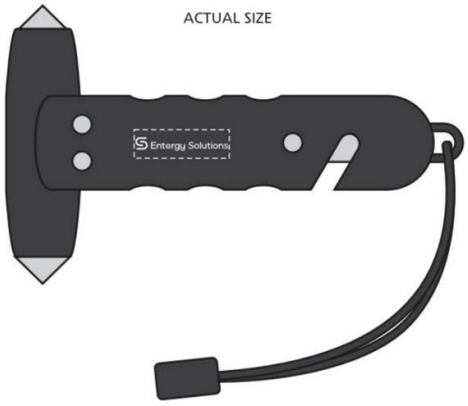


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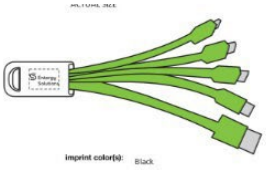
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ACTUAL SIZE



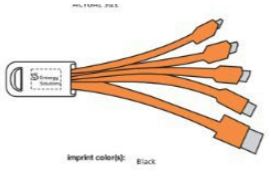
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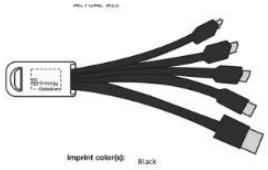
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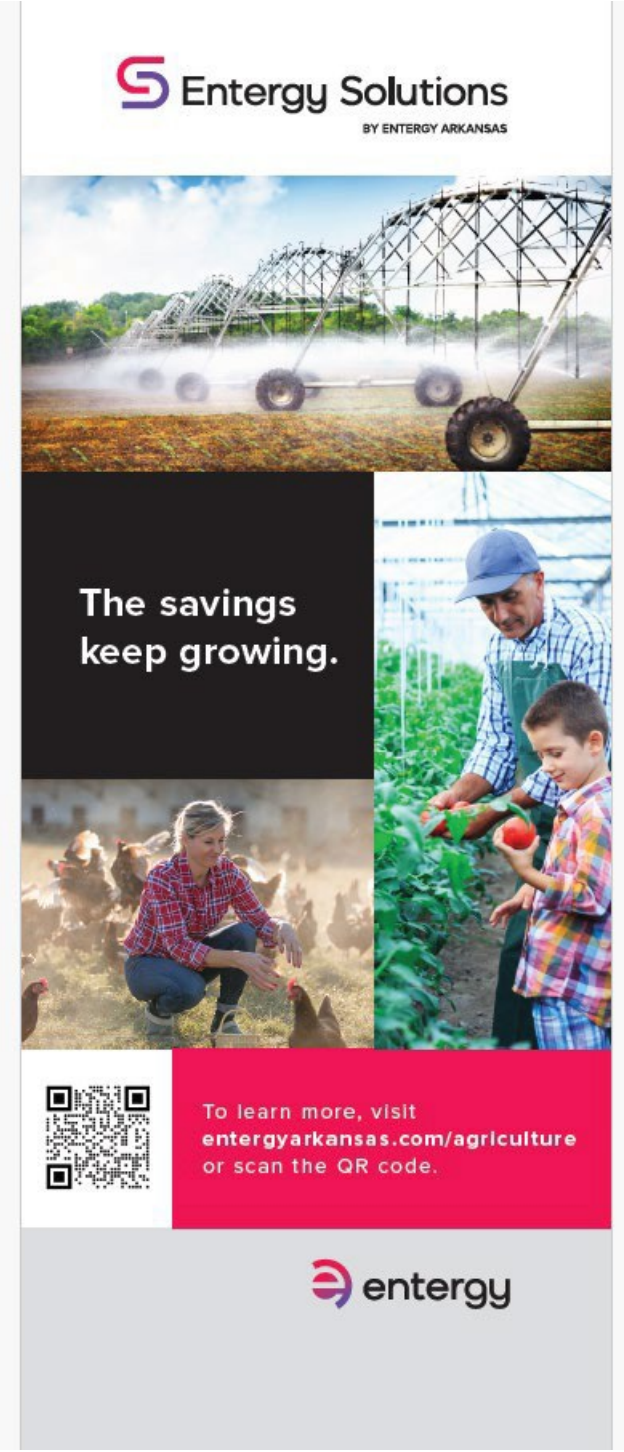
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1.3 Trade Show Booth Display



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1.4 Jeep Compass Wrap



NOTE TO VENDOR:
Match red color with
Entergy red (PMS 192)

Red
PMS 192
C0 M100 Y58 K0
R255 G26 B88
HEX #FF1A58











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1.5 2024 EAL Branded Apparel

FRONT LOCATION :: Left Chest
IMPRINT SIZE :: 3.5" W
THREAD COLORS :: Red
Violet
Black







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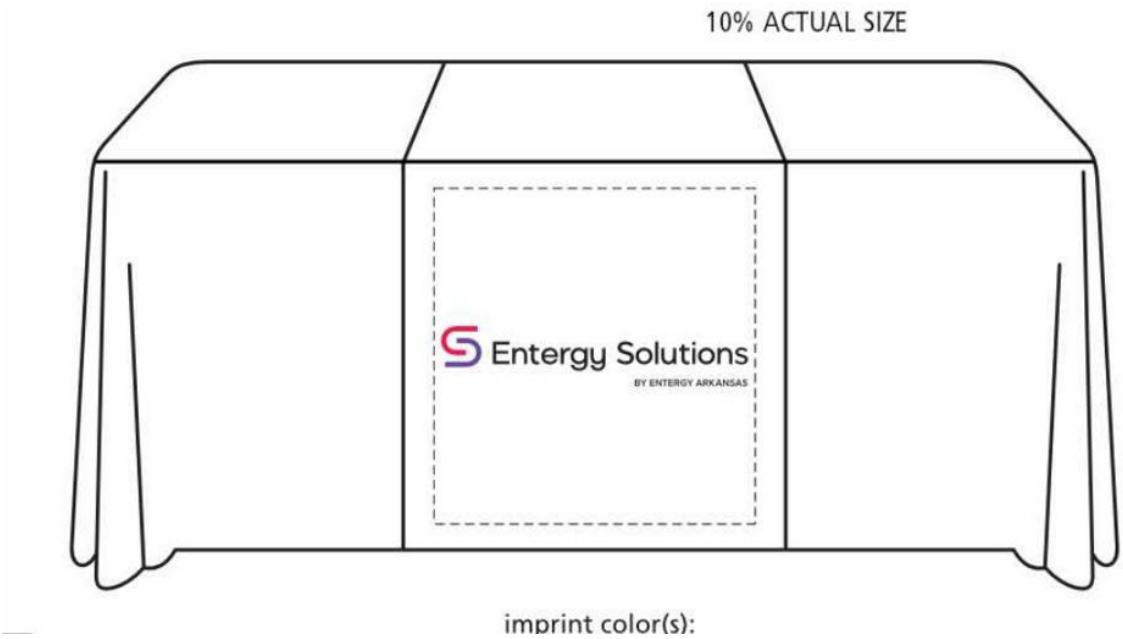




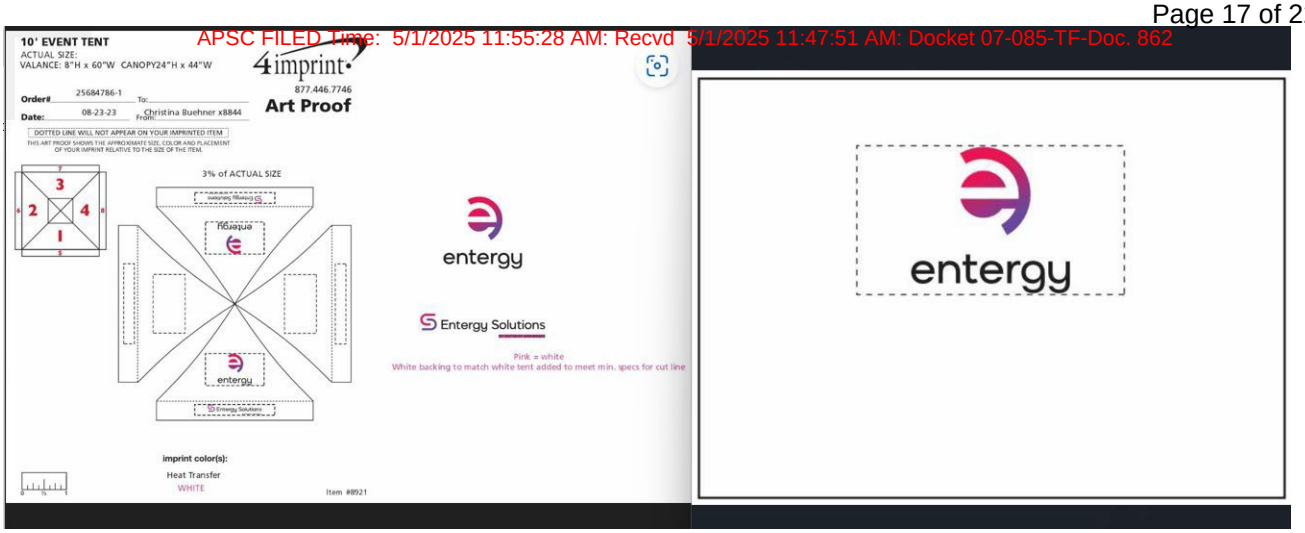
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1.6 Event booth branded items – Tent, Tablecloth and Display Banner





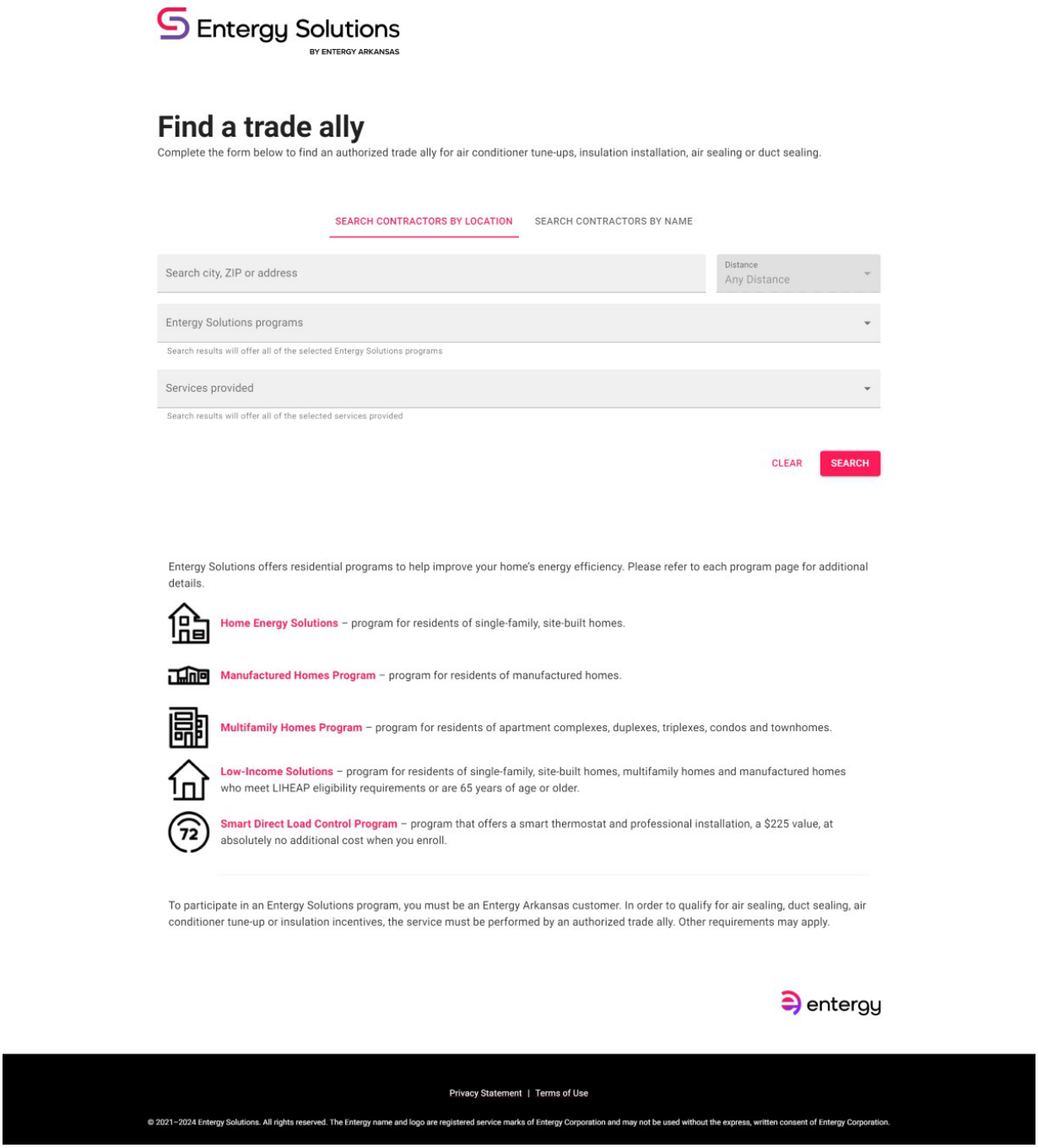
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2. Cross Residential Programs

2.1 Find A Trade Ally Tool



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2.2 EAL Trade Ally Digital Stamp



2.3 EAL Trade Ally Verify Me Distribution Letter

Entergy Solutions
BY ENTERGY ARKANSAS

Sept. 6, 2024

Dear trade ally partner,

To help limit customer confusion and scam concerns surrounding in-home visits and door-to-door neighborhood canvassing, we are excited to launch new "Verify me" tools for all of your field technicians that perform Entergy Solutions work. We ask that you distribute the enclosed items for immediate use. Included are:

- **"Verify me" companion badge.** This new badge should be worn in addition to all existing Entergy Solutions ID badges. Going forward, new badges will have the "Verify me" information on the back of the ID badges. Encourage your customers to scan the QR code with a smartphone to see that your company is listed as an authorized Entergy Solutions trade ally on Entergy's website, **EntergyARTradeAlly.com**.
- **"Authorized Contractor" lanyard.** This new lanyard is to replace all lanyards provided in the past. The Entergy branding will reinforce your company's validity when performing Entergy Solutions work.
- **"Verify me" padfolio.** This new padfolio is a great way to organize paperwork and collateral when entering customers' homes. Like the new companion badge, customers can scan the QR code on the padfolio to confirm your company is an authorized trade ally.

As shown on the back, Entergy Solutions web pages have been updated to provide additional information about trade allies and ensure customers can easily verify authorized companies.

Thank you for your continued partnership, and we hope these new tools prove to be helpful.

Sincerely,
Your Entergy Solutions Team

entergysolutionsar.com

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2.4 EAL Trade Ally Verify Me Badge



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2.5 EAL Weatherization Newsletter Article Jan 2024

EAL Circuit Newsletter Article – Jan 2024

HES Weatherization

Header: Start Saving Energy in the New Year

5 Ways to Reduce Energy Consumption and Improve Home Energy Efficiency in the New Year

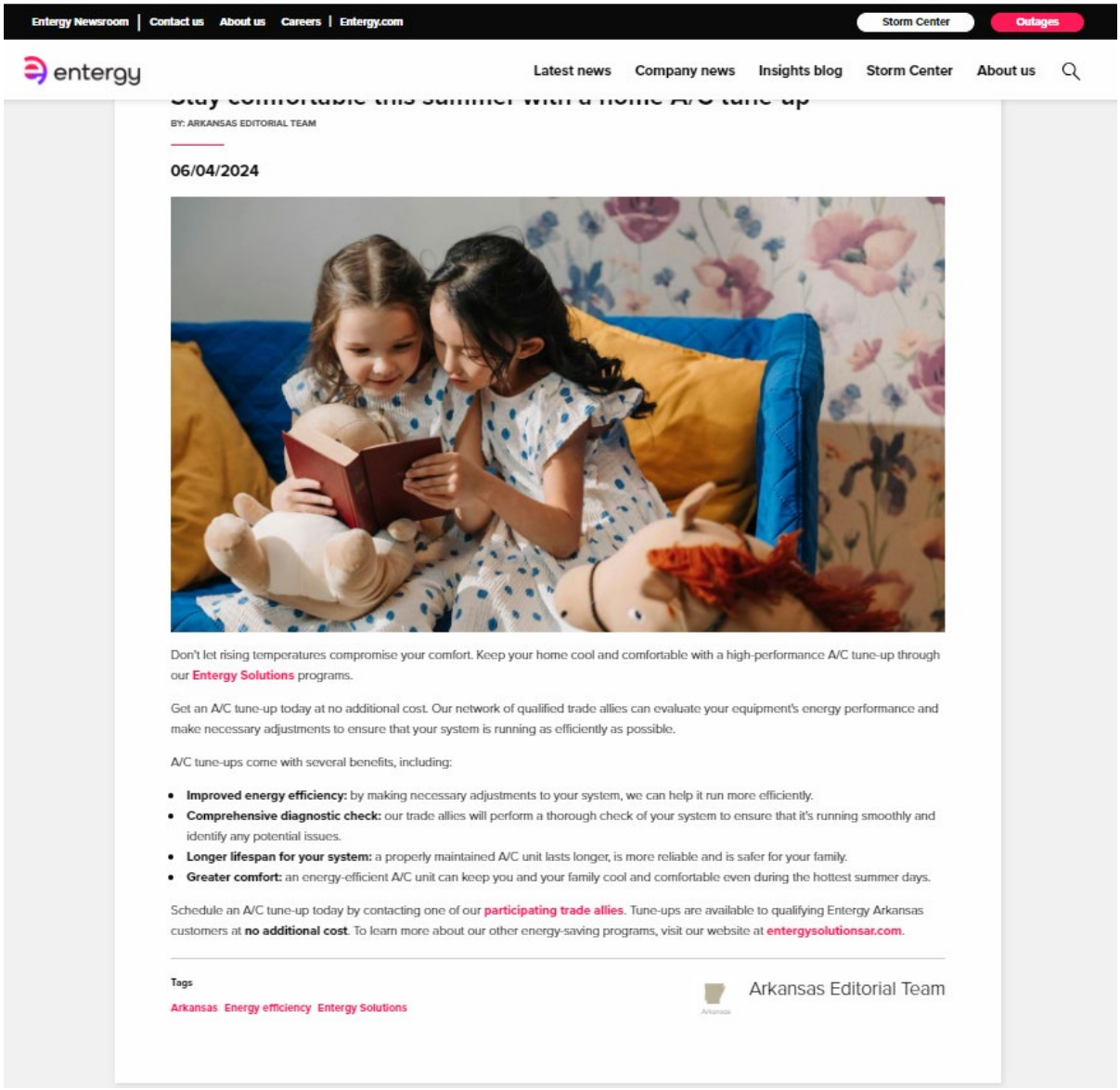
1. Weatherize your home. Sealing leaks and adding insulation can improve your home's energy efficiency, comfort, and durability.
2. Use less energy. Turn off lights and appliances when not in use, use energy-efficient appliances, and take advantage of natural light.
3. Make energy-efficient upgrades. Consider installing a smart thermostat, which allows you to control your home's temperature remotely and adjust it based on your personal preferences.
4. Get the whole family involved. Make energy-saving efforts a fun challenge and track progress as a family.
5. Make energy-saving habits a regular part of your routine. By consistently following these habits, you can see long-term benefits and make a lasting impact on your energy consumption.

By following these tips, you can make a resolution to improve the energy efficiency of your home and save energy all year long. Visit **entergyarkansas.com/efficiency** to learn more about energy-saving programs and resources.



2.6 EAL_ACTU Newsletter June 2024

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Entergy Newsroom | Contact us About us Careers | Entergy.com Storm Center Outages

entergy Latest news Company news Insights blog Storm Center About us

BY: ARKANSAS EDITORIAL TEAM

06/04/2024

Don't let rising temperatures compromise your comfort. Keep your home cool and comfortable with a high-performance A/C tune-up through our Entergy Solutions programs.

Get an A/C tune-up today at no additional cost. Our network of qualified trade allies can evaluate your equipment's energy performance and make necessary adjustments to ensure that your system is running as efficiently as possible.

A/C tune-ups come with several benefits, including:

- **Improved energy efficiency:** by making necessary adjustments to your system, we can help it run more efficiently.
- **Comprehensive diagnostic check:** our trade allies will perform a thorough check of your system to ensure that it's running smoothly and identify any potential issues.
- **Longer lifespan for your system:** a properly maintained A/C unit lasts longer, is more reliable and is safer for your family.
- **Greater comfort:** an energy-efficient A/C unit can keep you and your family cool and comfortable even during the hottest summer days.

Schedule an A/C tune-up today by contacting one of our participating trade allies. Tune-ups are available to qualifying Entergy Arkansas customers at **no additional cost**. To learn more about our other energy-saving programs, visit our website at entergysolutionsar.com.

Tags

Arkansas Energy efficiency Entergy Solutions

Arkansas Editorial Team

2.7 EAL Newsletter Article July 2024 ACTU

APPROVED: Date Time: 5/1/2025 11:45:23 AM Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

Entergy Arkansas
Newsletter Article: A/C Tune-up
July 2024



Stay cool all summer long with an A/C tune-up.

Prepare your home for the hot summer days ahead with a high-performance A/C tune-up through our Entergy Solutions programs. Maintain your cooling system and improve your home's efficiency and comfort level.

Get an air conditioning tune-up at **no extra cost**. In addition to a typical seasonal service check, your equipment will be evaluated, and necessary adjustments will be made to ensure it is operating at maximum efficiency, saving you energy while keeping you comfortable.

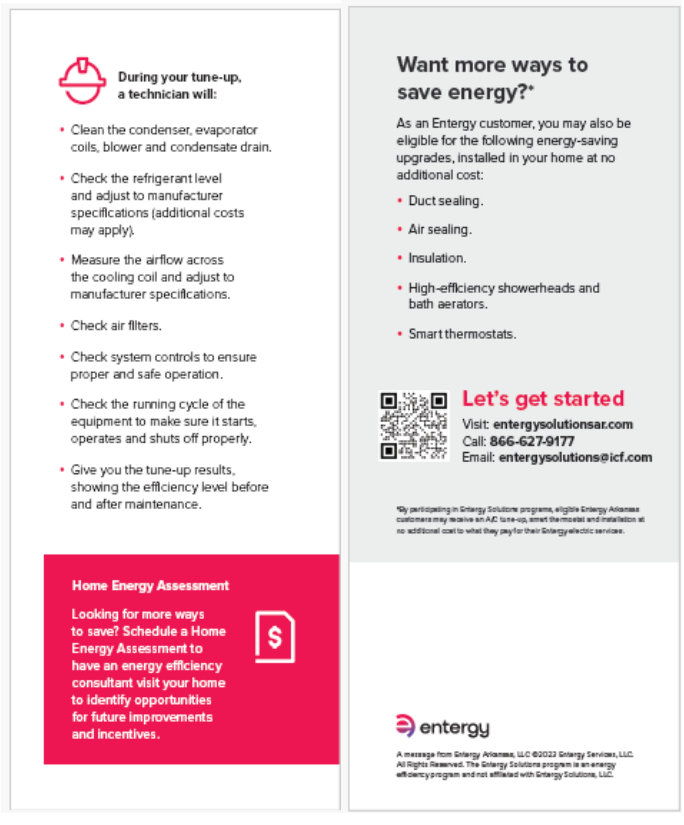
Benefits of an air conditioner tune-up:

- **Get more from your tune-up.** A participating trade ally will evaluate your equipment's energy performance and ensure it's operating as efficiently as possible. Typical adjustments include cleaning the evaporator coil, outdoor condenser and blower, and correcting the refrigerant charge.
- **Save money and energy.** Get a tune-up at no additional cost.
- **Worry less.** A properly maintained air conditioner lasts longer, is more reliable, and is safer for your family.
- **Stay cool.** An energy-efficient air conditioner keeps you cool and comfortable during even the hottest summer days.

Don't wait any longer. Contact one of our participating trade allies to schedule your no-cost A/C tune-up. To learn more about Entergy Solutions and other ways to save, visit entergysolutionsar.com.

2.8 242268_EAL_AC_Tune-up_Brochure_3.5x8.5_v09_Web_RELEASE.pdf
APSC FILED Time: 5/1/2023 11:58:28 AM: Recv'd 5/1/2023 11:58:50 AM: Docket 07-085-TF Doc. 862





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2.9 42268_EAL_AC_Tune-up_Co Branded_Brochure_3.5x8.5_v09_Web_RELEASE.pdf



Entergy Solutions

Professional A/C tune-ups

Stay comfortable and keep your A/C running at its best with a tune-up at no additional cost.

Keep it cool. Keep it efficient.

A well-maintained A/C provides better comfort and runs more efficiently, which can help lower your energy use and costs. A tune-up can also extend the life of your A/C and potentially prevent costly repairs or replacement.

Make an appointment, and a certified technician will perform a thorough evaluation of your equipment and make adjustments so it operates closer to the performance level of a new unit—all at no additional cost.

During your tune-up, a technician will:

- Clean the condenser, evaporator coils, blower and condensate drain.
- Check the refrigerant level and adjust to manufacturer specifications (additional costs may apply).
- Measure the airflow across the cooling coil and adjust to manufacturer specifications.
- Check air filters.
- Check system controls to ensure proper and safe operation.
- Check the running cycle of the equipment to make sure it starts, operates and shuts off properly.
- Give you the tune-up results, showing the efficiency level before and after maintenance.

Home Energy Assessment

Looking for more ways to save? Schedule a Home Energy Assessment to have an energy efficiency consultant visit your home to identify opportunities for future improvements and incentives.

Want more ways to save energy?*

As an Entergy customer, you may also be eligible for the following energy-saving upgrades, installed in your home at no additional cost:

- Duct sealing.
- Air sealing.
- Insulation.
- High-efficiency showerheads and bath aerators.
- Smart thermostats.

Let's get started

Visit: **entergysolutionsar.com**
Call: **866-627-9177**
Email: **entergysolutions@icf.com**

*By participating in Entergy Solutions programs, eligible Entergy Arkansas customers may receive an A/C tune-up, smart thermostat and installation at no additional cost to what they pay for their Entergy electric services.

Company Name
Phone Number
Email
Website

entergy

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2.10 42269_EAL_Weatherization_Brochure_3.5x8.5_v08_Web_RELEASE.pdf

Weatherization

Keep your home comfortable year-round while saving energy



Entergy Solutions

Stand up to winter's chill and summer's heat

Weatherizing your home can help you get the most out of your heating and cooling system in any season. A well-sealed home with the right insulation helps improve comfort and durability while saving energy and money. It also improves air quality by keeping out humidity, dust, pollen and pests.

Duct sealing

In a typical home, around 20% to 30% of the air that moves through the duct system is lost due to leaks, holes and poorly connected ducts.* Leaky ducts can lead to:

- Higher energy costs, especially during winter and summer.
- Difficulty heating and cooling, no matter how the thermostat is set.
- Stuffy, uncomfortable rooms.
- Gases from furnaces, stoves and water heaters entering rooms throughout the home, which is a health and safety issue.

Air sealing

If air leaks are making your home drafty, you're probably wasting energy. Applying weather stripping to doors, caulking around windows and adding insulation in attic areas all go a long way in preventing air leaks. Common air leak locations include:

- Behind walls.
- Recessed lights.
- Plumbing penetrations.
- Windows and doors.
- Wiring holes.

*Source: ENERGY STAR®



Ceiling insulation

Ceiling insulation helps keep the desired temperature in your house all year round, protecting it against cold in winter and excess heat in summer. A well-sealed and properly insulated attic can help you save up to 10% on your annual energy bills.*

Home comfort starts here

- Visit **entergysolutionsar.com** to find an approved trade ally and schedule your weatherization appointment.
- An approved trade ally will inspect your home for air leaks and problems with your insulation‡ or duct system; install insulation; and seal all leaks, connections, drafts and holes.
- After installation is finished, the work may be subject to a quality-assurance inspection.
- Entergy Arkansas pays the incentive directly to the trade ally, which usually covers all out-of-pocket costs.

*Source: ENERGY STAR
‡Insulation is not applicable to manufactured homes.

Bring home even more savings

Entergy Solutions also offers air conditioner tune-ups and installation of energy-saving products such as high-efficiency showerheads, faucet aerators and smart thermostats at no additional cost.‡ Plus, with a Home Energy Assessment, an energy efficiency consultant will survey your home to identify opportunities for future energy efficiency improvements and incentives.

Let's begin

Visit: **entergysolutionsar.com**
Call: **866-627-9177**
Email: **entergysolutions@icf.com**

‡Products installed may vary.

entergy

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2.11 42269_EAL_Weatherization_Co Branded Brochure_3.5x8.5_v08_Web_RELEASE.pdf
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Weatherization

Keep your home comfortable year-round while saving energy

Entergy Solutions

Stand up to winter's chill and summer's heat

Weatherizing your home can help you get the most out of your heating and cooling system in any season. A well-sealed home with the right insulation helps improve comfort and durability while saving energy and money. It also improves air quality by keeping out humidity, dust, pollen and pests.

Duct sealing

In a typical home, around 20% to 30% of the air that moves through the duct system is lost due to leaks, holes and poorly connected ducts.* Leaky ducts can lead to:

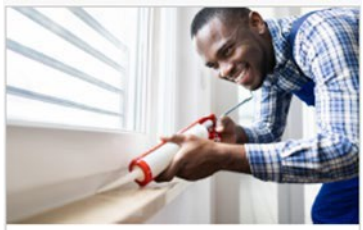
- Higher energy costs, especially during winter and summer.
- Difficulty heating and cooling, no matter how the thermostat is set.
- Stuffy, uncomfortable rooms.
- Gases from furnaces, stoves and water heaters entering rooms throughout the home, which is a health and safety issue.

Air sealing

If air leaks are making your home drafty, you're probably wasting energy. Applying weather stripping to doors, caulking around windows and adding insulation in attic areas all go a long way in preventing air leaks. Common air leak locations include:

- Behind walls.
- Recessed lights.
- Plumbing penetrations.
- Windows and doors.
- Wiring holes.

*Source: ENERGY STAR®



Ceiling insulation

Ceiling insulation helps keep the desired temperature in your house all year round, protecting it against cold in winter and excess heat in summer. A well-sealed and properly insulated attic can help you save up to 10% on your annual energy bills.*

Home comfort starts here

- Visit **entergysolutionsar.com** to find an approved trade ally and schedule your weatherization appointment.
- An approved trade ally will inspect your home for air leaks and problems with your insulation† or duct system; install insulation; and seal all leaks, connections, drafts and holes.
- After installation is finished, the work may be subject to a quality-assurance inspection.
- Entergy Arkansas pays the incentive directly to the trade ally, which usually covers all out-of-pocket costs.

*Source: ENERGY STAR
†Insulation is not applicable to manufactured homes.

Bring home even more savings

Entergy Solutions also offers air conditioner tune-ups and installation of energy-saving products such as high-efficiency showerheads, faucet aerators and smart thermostats at no additional cost.‡ Plus, with a Home Energy Assessment, an energy efficiency consultant will survey your home to identify opportunities for future energy efficiency improvements and incentives.

Let's begin

Visit: **entergysolutionsar.com**
Call: **866-627-9177**
Email: **entergysolutions@icf.com**

‡Products installed may vary.

Company Name
Phone Number
Email
Website

entergy

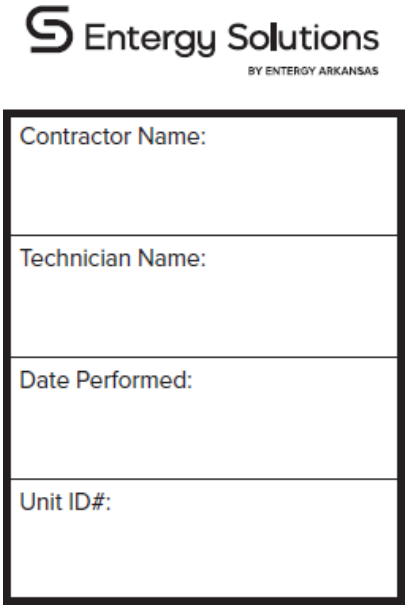
A message from Entergy Arkansas, LLC ©2023 Entergy Services, LLC. All Rights Reserved. The Entergy Solutions program is an energy efficiency program and not affiliated with Entergy Solutions, LLC.

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2.12 EAL Business Card Implementor



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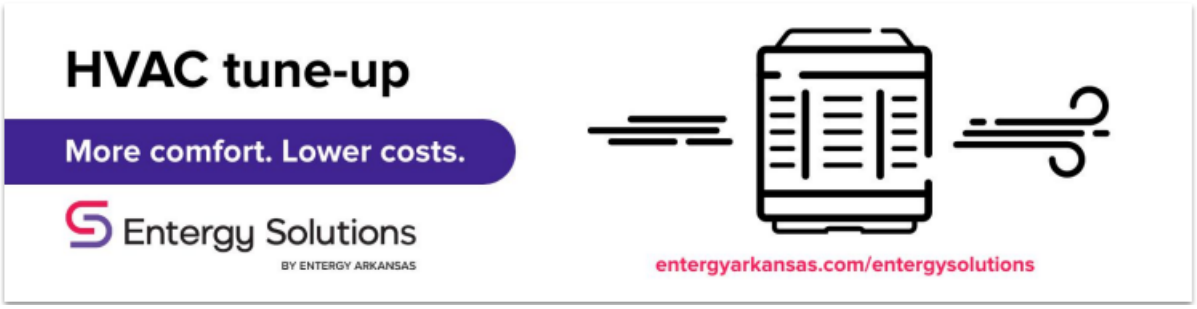
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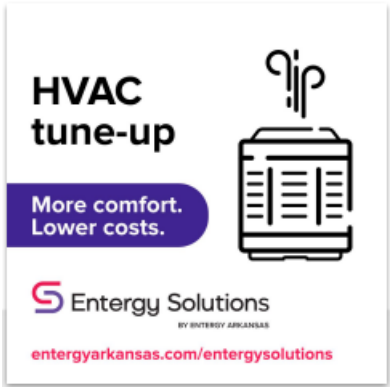
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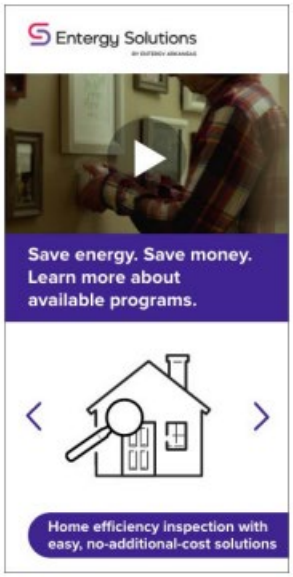
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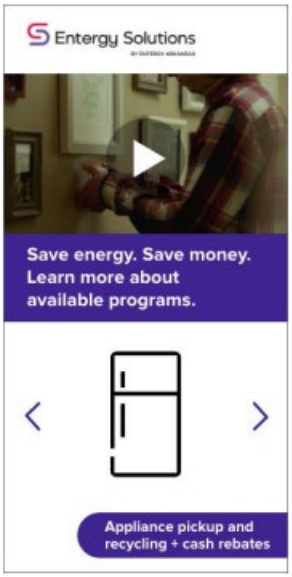
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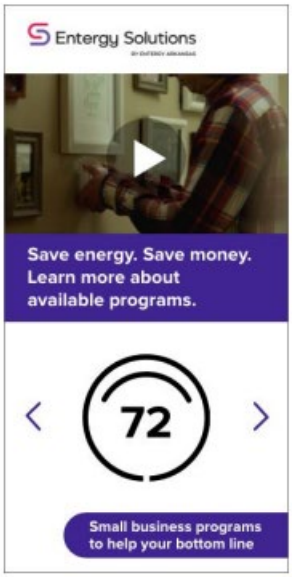












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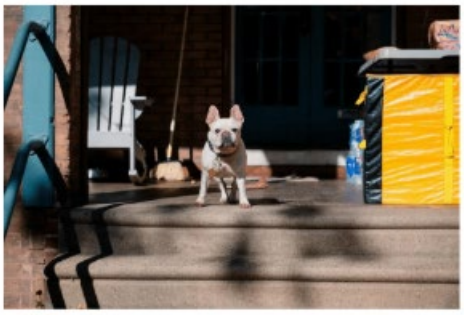
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3 Portfolio Programs

3.1 Home Energy Solutions

3.1.1 EAL_HES_Circuit Newsletter Article_March 2024

Entergy Arkansas
HES Program Newsletter Article
March 2024



Don't Sweat It: Upgrade Your Home's Comfort and Efficiency

Looking to reduce your energy usage and save money? Here are four easy tips to get started with using less energy all year long:

- **Weatherize your home:** Don't let air leaks waste energy and money. Our Home Energy Solutions program includes weatherization upgrades that can help improve your home's energy efficiency, making it more comfortable and durable in the long run.
- **Use less energy:** Small changes can add up. Turn off appliances when not in use and conserve water by turning off the tap when brushing your teeth.
- **Get your family involved:** Encourage your family to participate in your energy-saving efforts. Make it fun by keeping track of progress and creating a chart of small changes each family member can make.
- **Make it a habit:** Stick with your new energy-saving routine and watch your energy usage decrease. Visit entergyarkansas.com/efficiency to learn more about energy efficiency programs and talk with participating trade ally about ways to save even more.

By following these easy tips, you can reduce your energy consumption and improve the energy efficiency and comfort of your home for years to come. If you want more information or want to explore other Entergy Solutions programs, visit entergysolutionsar.com, call 866-627-9177, or email us.

Improving your home's comfort and efficiency is easy with Entergy Arkansas' Home Energy Solutions Program. Don't wait - take advantage of this offer today and start enjoying a more comfortable and energy-efficient home.

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3.1.2 EAL Newsletter Article Nov 2024 HES Weatherization

Entergy Arkansas
Weatherization Newsletter Article
November 2024



Get Unmatched Comfort this Season

Enhance the comfort of your home by weatherizing it. Did you know that one of the key areas to focus on for improved energy efficiency is your home's attic? Many homes in the United States lack adequate insulation and have significant air leakage issues. By sealing air leaks and adding insulation, you can not only increase your comfort but also save up to 11%* on your energy costs.

With our Entergy Solutions Programs, you may qualify for air sealing, duct sealing, and attic insulation installation measures. By taking advantage of these upgrades, you can ensure year-round comfort in your home while conserving energy.

Weatherization upgrades offer several benefits for your home:

1. Energy Efficiency: Sealing leaks and adding insulation boosts your home's efficiency, resulting in energy savings.
2. Comfort: Say goodbye to common comfort problems like excessively cold rooms in winter or overly hot spaces in summer by properly sealing and insulating your home.
3. Air Quality: A well-sealed and well-insulated home keeps out excess humidity, dust, pollen, and pests, improving the overall air quality within your living space.

Take the necessary steps to weatherize your home today and enjoy the benefits of increased energy efficiency, enhanced comfort, and improved air quality for you and your family.

Save energy while improving your home's comfort for years to come. Visit entergysolutionsar.com or call 866-627-9177 to find a participating trade ally or to learn more.

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3.1.3 40122_EAL_HES_Program_Overview_Co-Branded_Flyer_v04_Print_RELEASE.pdf



Your home is one of the largest investments you make. Protect that investment by uncovering energy-saving opportunities with a Home Energy Assessment. Entergy Arkansas offers its residential customers this comprehensive evaluation at no additional cost to you. A trained consultant will identify the best energy-saving improvements for your home and create a plan that fits your needs.

The benefits

A Home Energy Assessment may help:

- Save energy.
- Make your home safer and more efficient.
- Increase the comfort of your home.
- Increase the value of your home.

Program incentives and savings

As part of the Home Energy Solutions program, Entergy Arkansas offers a suite of efficiency-improving measures at no additional cost to qualifying customers, including but not limited to:

- Performing a home-energy assessment.
- Sealing air leaks in your ductwork.
- Sealing air leaks in your home.
- Adding ceiling insulation.
- Providing a high-performance air conditioning tune-up.
- Installing a smart thermostat.
- Installing energy-saving items at the time of the assessment such as:
  - Advanced power strip.
  - Low-flow showerhead and aerators (for customers with electric water heaters).

"I am very surprised and thankful that this program was offered to us free of charge. It has been very helpful and educational."
— an actual Entergy Solutions customer



Are you eligible?

Take your highest summer energy bill and divide it by the actual conditioned square footage of your home. If your energy costs are 10 cents or more per square foot or your home is at least 10 years old, your home qualifies for a Home Energy Assessment.

How to participate

1. Call us at 866-627-9177. We will schedule an appointment at your convenience.
2. During the assessment, the trade ally will identify ways to improve the energy efficiency of your home. Your trade ally will also install a variety of energy-saving items all at no additional cost to you.

More ways to save

Other Entergy Arkansas residential programs that can help you save energy include:

- Smart Direct Load Control Pilot Program.
- Point of Purchase Program.

You may benefit from a Home Energy Assessment if you have:

- Rooms that are too hot or too cold.
- Drafty windows and doors.

Get started today

For more information or to explore other Entergy Solutions programs you may be eligible for, call 866-627-9177, visit entergyarkansas.com/efficiency, email us at homeenergysolutions@eaglect.com or scan the QR code.

AREA FOR CO-BRANDING CONTACT INFORMATION

entergy

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The benefits

A Home Energy Assessment may help:

- Save energy.
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- Increase the value of your home.

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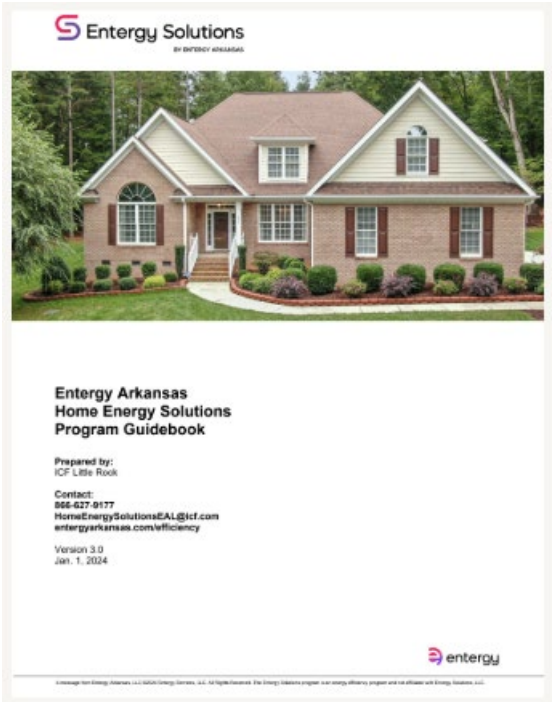
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— an actual Entergy Solutions customer



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3.1.5 HES Guidebook_2024_RELEASE.pdf



Entergy Solutions

by ENTERGY ARKANSAS

Entergy Arkansas
Home Energy Solutions
Program Guidebook

Prepared by:
ICF Little Rock

Contact:
866-627-9177
HomeEnergySolutionsEAL@icf.com
entergyarkansas.com/efficiency

Version 3.0
Jan. 1, 2024

entergy

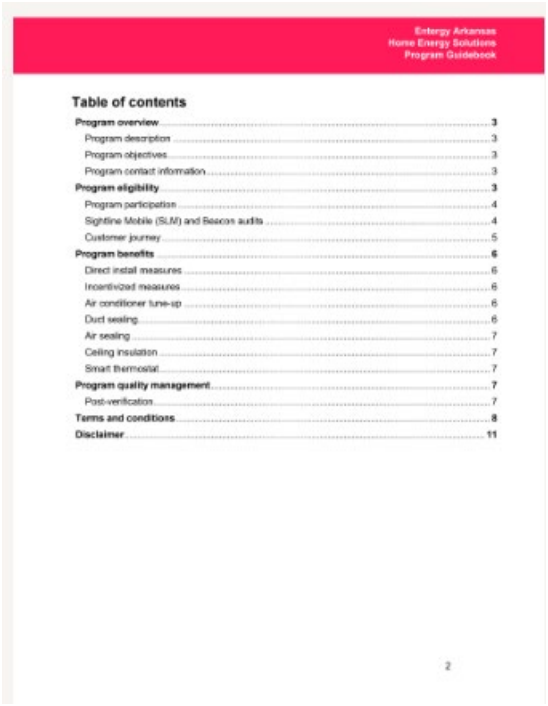


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Program overview

Program description

The Entergy Solutions Home Energy Solutions Program provides cost-effective energy efficiency measures to single-family homes throughout the Entergy Arkansas ("Entergy Arkansas") electric service territory. Through the program, participating trade allies will perform energy surveys and energy efficient upgrades at eligible participating single-family homes. Energy-efficient upgrades consist of measures such as air conditioner tune-ups, duct sealing, air sealing and ceiling insulation. Additionally, direct install technicians will install energy efficiency measures to the home. Trade allies will also suggest other areas for improvements and opportunities for participation in other Entergy Arkansas energy efficiency programs.

Program objectives

The primary objective of the Home Energy Solutions Program will be to help Entergy Arkansas homeowners and/or renters reduce their energy usage and possibly save money on their utility bill through installation of no-cost energy efficiency measures and offer incentives for more in-depth energy efficiency measures in both common areas and individual homes. In addition, this program is designed to help Entergy Arkansas homeowners understand their energy consumption and how to use energy wisely.

Program contact information

Phone: **866-627-9177**
Email: **HomeEnergySolutionsEAL@icf.com**
Web: **entergyarkansas.com/efficiency**

Program eligibility

Owners or renters (certifying required consent) of single-family homes located within the Entergy Arkansas electric service territory are eligible for the Entergy Arkansas Home Energy Solutions Program. Customers with homes that have an energy use of $0.10 per square foot in the summer or are 10 years or older may qualify for the core weatherization measures. Homes for certain measures must have a ducted central heating and air conditioning unit installed prior to participation in the Home Energy Solutions Program.

Funds are limited, and services are available in all Entergy Arkansas service territories on a first-come, first-served basis. For more information about other Entergy Arkansas programs, please visit **entergyarkansas.com**.



Program participation

STEP 1: Enroll in the program by calling a participating trade ally or by emailing us at **HomeEnergySolutionsEAL@icf.com**. For a list of participating trade allies, please use our Find a Provider Tool at **EntergyARTradeAlly.com**.

STEP 2: Schedule an appointment to have a trade ally visit your residential home to install the program measures and conduct your energy survey. The technician will determine if the home is a candidate for incentivized measures. An adult representative should plan to be present for the duration of the energy survey and product installation, which will take up to two hours. For weatherization services, a more in-depth energy audit can take up to four hours.

STEP 3: Sign the completed participation document, and please provide any comments or suggestions about the program.

Sightline Mobile (SLM) and Beacon audits

Depending on your home's energy usage and size, you may be eligible for either a home energy survey or a more detailed energy-efficient assessment. If either identifies ways to save energy in your home, you will be eligible to receive qualifying core measures installed at no direct cost by a trade ally.

SLM audit

During the SLM audit walk-through survey, trade allies will install energy-saving measures including advanced power strips, showerheads and kitchen/bath aerators. These measures can instantly save energy and money when properly installed and used. These measures will be installed at no additional cost to the customer. A survey will provide insights into other ways to use energy wisely.

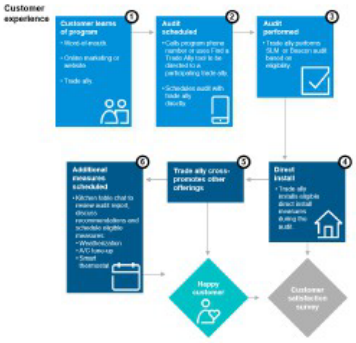
Beacon audit

The Beacon audit is a comprehensive evaluation on your home's energy use. This audit will provide recommendations on ways to save energy. During the Beacon audit, customers eligible for weatherization installation will start with a home inspection before work is performed. The energy auditor will complete an interior "walk-through" inspection of the air-conditioned space. A pre-blower door test must be performed to confirm the need for air sealing, and a pre-duct blaster test must be performed to confirm the need for duct sealing. If the pre-testing confirms the need for either air sealing and/or duct sealing, the air sealing and duct sealing may be authorized. Post testing must be performed in the structure and/or the duct to confirm the air-leakage reduction.

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Customer journey

Customer experience



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Program benefits

Direct install measures

In this program, energy-efficient products are furnished and installed at no additional cost to Entergy Arkansas Home Energy Solutions Program customers. The measures available for direct installation in eligible properties and locations include:

- 1.5 gallons-per-minute showerheads and faucet aerators (when existing fixtures have flow rates of 2.0 gallons per minute or greater and where the water heater is powered by electricity).
- Advanced power strips for qualifying home entertainment system.
- Entergy customers with qualified air conditioning systems and Wi-Fi may sign up for the Smart Direct Load Control Pilot Program. Smart Thermostat eligibility is based upon the presence of continuous Wi-Fi internet and agreement to participate in summer demand response events. Additionally, the residence cannot be a current participant in the Summer Advantage Program.



Incentivized measures

For all weatherization measures, electricity must be the primary source of heating or cooling. There must be a working central heat pump, working central electric air conditioning system or working central electric resistance furnace in use at the residence.

Air conditioner tune-up

Any Entergy Home Energy Solutions Program customers that have central air conditioning or heat pump systems on-site may qualify for an air conditioning tune-up. Customers who have participated in the previous five years will not be eligible.

The Entergy Arkansas air conditioner tune-up involves a special diagnostic and service procedure that not only ensures the system is operating at peak efficiency (and lowest operational cost) but also identifies shortcomings that are keeping the system from doing so. After the tune-up is complete, it may be subject to a post-installation quality-assurance verification.

Duct sealing

Customers of Entergy who use a central duct system for heating and cooling their home may qualify for duct sealing based on the total system leakage and opportunity for improvement. Duct sealing

6

will consist of air leaks in the ductwork being reduced with the application of long-lasting materials. After the duct sealing is complete, the home may be subject to a post-installation quality-assurance verification.

Air sealing

Customers of Entergy who have substantial air leakage qualify for air sealing. Sealing may include weatherstripping or caulking around doors or windows. Air sealing may also include using expanding foam in plumbing penetrations and large holes in sheetrock and anywhere air can escape to the exterior. Industry standard materials and methods are used to reduce air infiltration and exfiltration. After the air sealing is complete, it may be subject to a post-installation quality-assurance verification.

Ceiling insulation

Customers with existing insulation of R-14.9 or less may qualify for insulation to bring their home up to the DOE recommendation of R-38. Improvement measure incentive eligibility is based upon existing R-value and square feet of ceiling insulated. Existing insulation is calculated based on its overall depth multiplied by the values listed in the Residential Insulation Guide for R-value of existing Attic insulation, and not by the perceived condition or density of the insulation. Spaces with distinct different depths or insulation mediums should be billed for separately. Only homes with a functioning central heat and air system are eligible for this service.

Smart thermostat

Entergy customers with qualified air conditioning systems and Wi-Fi may sign up for the Smart Direct Load Control offering. Participating trade allies will assist customers to complete the application during the Home Energy Solutions visit. Smart thermostat eligibility is based upon presence of continuous Wi-Fi internet. Customers can also choose to participate in summer demand response events.

Program quality management

Post-verification

Completed projects are subject to a post-installation verification, selected on a random basis. Typically, 10% of all homes that participated in the program will be selected for the verification.

If it is determined that an on-site post-verification is going to be performed, a program representative will contact the customer to schedule the property site verification.

By receiving a program service, the customer agrees to allow an on-site post-verification after work is completed.

Terms and conditions

These terms and conditions are only valid for service completed on or after Jan. 1, 2023. Only trade allies may submit applications for incentive consideration for the Home Energy Solutions program.

ENERGY AUDIT REPORT: The energy audit report provides the customer with a compiled review of energy-saving measures installed throughout the property, as well as recommendations related to energy efficiency programs available. Entergy Arkansas is not responsible for lost documentation.

ELIGIBILITY: Participants must be Entergy Arkansas electric utility customers with a working central air conditioner or heat pump. For homes without working central air conditioning, the home must have central electric heating. The residence must be at least 10 years old or have energy costs of 10 cents or more of the conditioned square footage on the highest summer cooling bill. Funds are limited, and services are available in select geographic areas on a first-come, first-served basis. In order for participants to qualify for measures such as Air Sealing, Duct Sealing and Air Conditioning Tune-up incentives, the service must be performed by an Entergy Arkansas trade ally. For other Entergy Arkansas programs, please visit entergyarkansas.com.

APPROVAL AND VERIFICATION: Entergy Arkansas reserves the right to verify the delivery of services and to have reasonable access to the participant's residence to verify the performance of energy efficiency direct install measures and/or energy efficiency work. Prior to any payment of incentives, Entergy Arkansas reserves the right to verify sales transactions. The customer's trade ally will verify that the installed energy-saving measures meet all applicable building codes; zoning laws; local, state and federal requirements; and other relevant requirements. The customer's trade ally is responsible for any applicable permits as required by law. Outdoor temperatures and other weather conditions may affect this verification process. The participant acknowledges and agrees to participate if their home is selected for a quality-control post-installation verification by Entergy Arkansas or it's program implementer ICF. No warranty is expressed or implied by this verification.

PAYMENT: Each measure may only receive one full incentive payment from Entergy Solutions within the life of the measure.

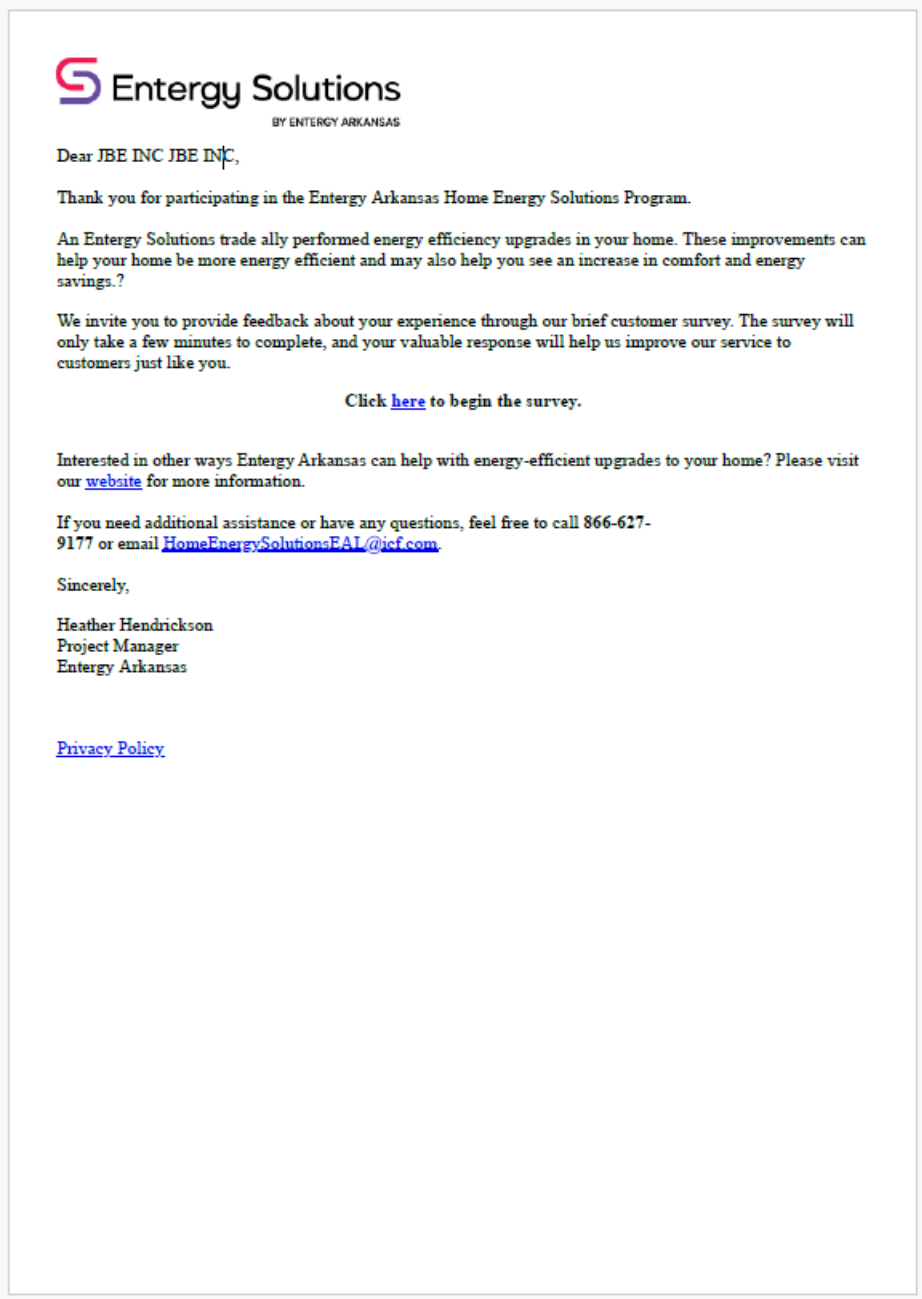
TAX LIABILITY: The customer is responsible for declaring and paying any and all applicable federal, state and local taxes that may be owed on any incentive. Entergy Arkansas will not be responsible for any tax liability that may be imposed on the customer as a result of the delivery of the energy efficiency measures. Please contact your tax professional for more information.

REMOVAL OF EQUIPMENT: The customer agrees, as a condition of participation in the program, to allow removal and disposal of the equipment being replaced by energy efficiency measures in accordance with all laws, rules and regulations. The customer agrees not to reinstall any newly installed equipment anywhere in Arkansas or transfer it to any other party for installation in Arkansas.

ENDORSEMENT: Entergy Arkansas does not endorse any particular manufacturer, product, system design, claim, trade ally or service in promoting this program.

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3.1.6 HES Customer Satisfaction Survey Email 2024



Entergy Solutions
BY ENTERGY ARKANSAS

Dear JBE INC JBE INC,

Thank you for participating in the Entergy Arkansas Home Energy Solutions Program.

An Entergy Solutions trade ally performed energy efficiency upgrades in your home. These improvements can help your home be more energy efficient and may also help you see an increase in comfort and energy savings.?

We invite you to provide feedback about your experience through our brief customer survey. The survey will only take a few minutes to complete, and your valuable response will help us improve our service to customers just like you.

Click here to begin the survey.

Interested in other ways Entergy Arkansas can help with energy-efficient upgrades to your home? Please visit our website for more information.

If you need additional assistance or have any questions, feel free to call 866-627-9177 or email HomeEnergySolutionsEAL@icf.com.

Sincerely,

Heather Hendrickson
Project Manager
Entergy Arkansas

Privacy Policy

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3.1.7 HES Customer Satisfaction Survey



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3.1.8 HES Customer Satisfaction Survey Letter

Entergy Solutions
BY ENTERGY ARKANSAS

STEVE TAYLOR
100 SUNSHINE VALLEY TER
PEARCY, AR 71964

Dear STEVE TAYLOR,

Thank you for participating in the Entergy Arkansas Home Energy Solutions Program.

An Entergy Solutions trade ally performed energy efficiency upgrades in your home. These improvements can help your home be more energy efficient and may also help you see an increase in comfort and energy savings.

We invite you to provide feedback about your experience through our brief customer survey. The survey will only take a few minutes to complete, and your valuable response will help us improve our service to customers just like you.

Please go to **surveymonkey.com/r/3TKBL78** or use your smartphone to scan the QR code below to begin the survey.

Interested in other ways Entergy Arkansas can help with energy-efficient upgrades to your home? Please visit **entergysolutionsar.com** for more information.

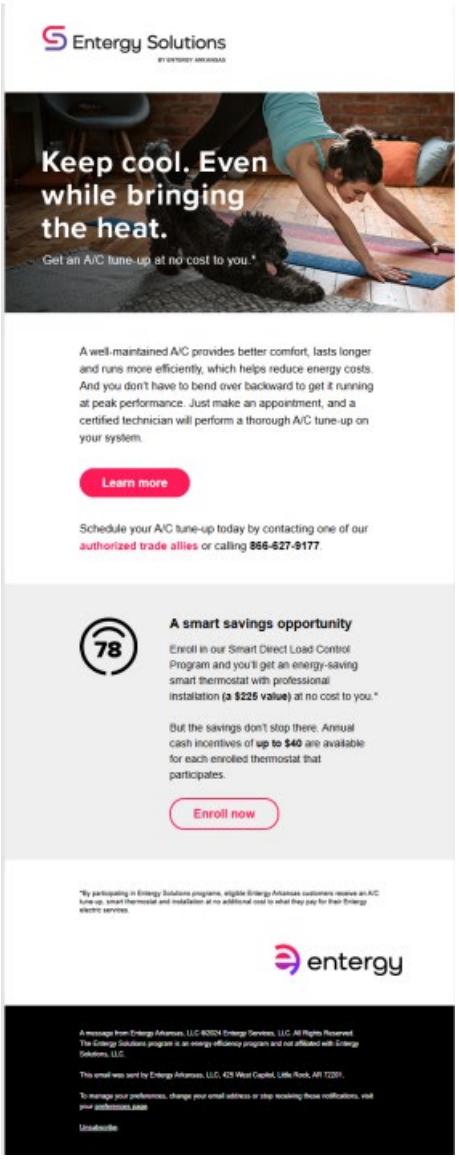
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Sincerely,

Heather Hendrickson
Project Manager
Entergy Arkansas

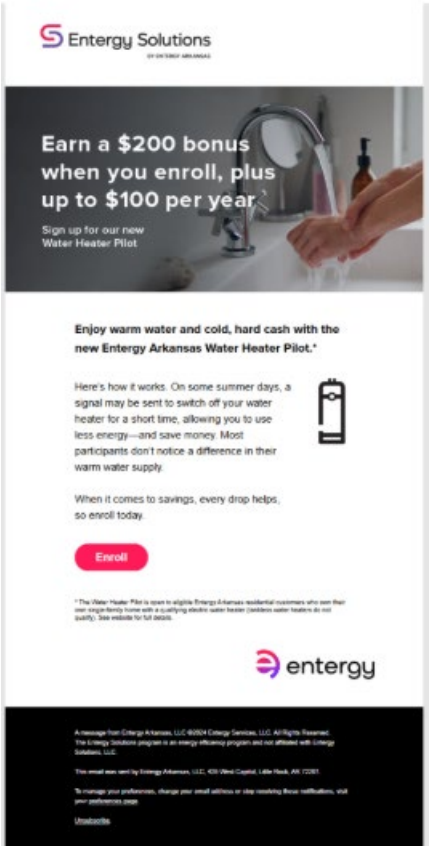
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3.1.9 March 2024_EAL_HES ACTU email.pdf



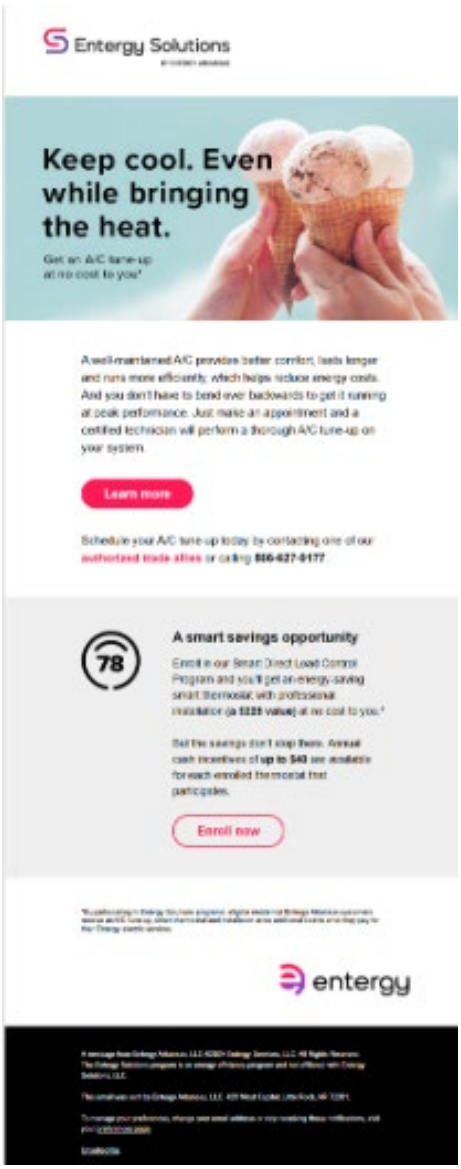
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3.1.10 EAL May Water Heater Pilot email.pdf



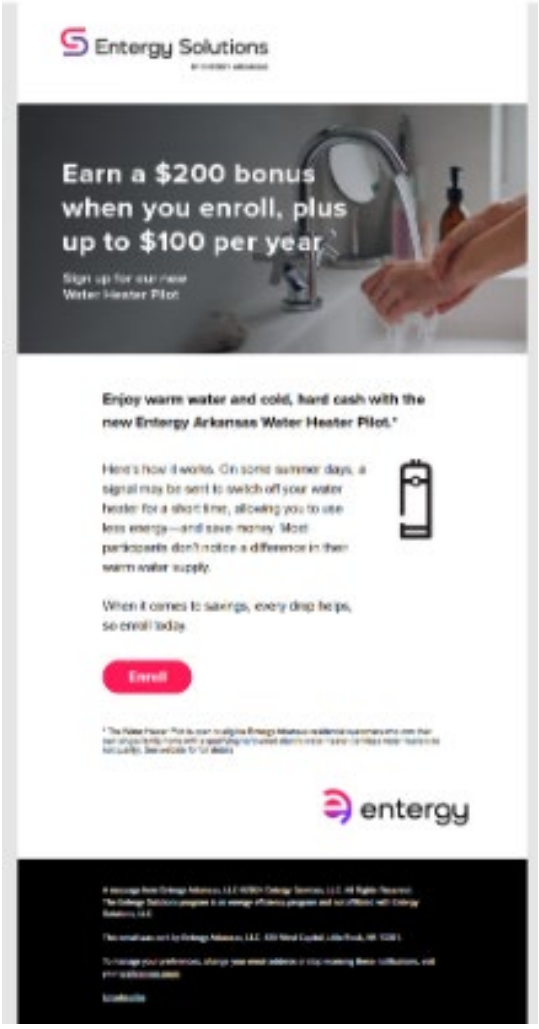
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3.1.11 EAL July_HES_AC Tuneup email.pdf



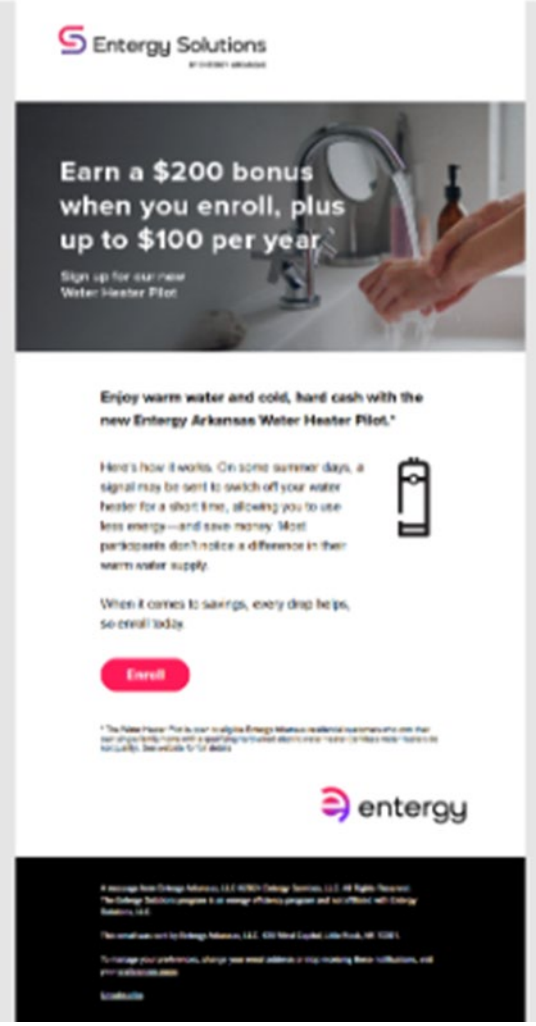
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3.1.12 July EAL_Water Heater pilot email.pdf



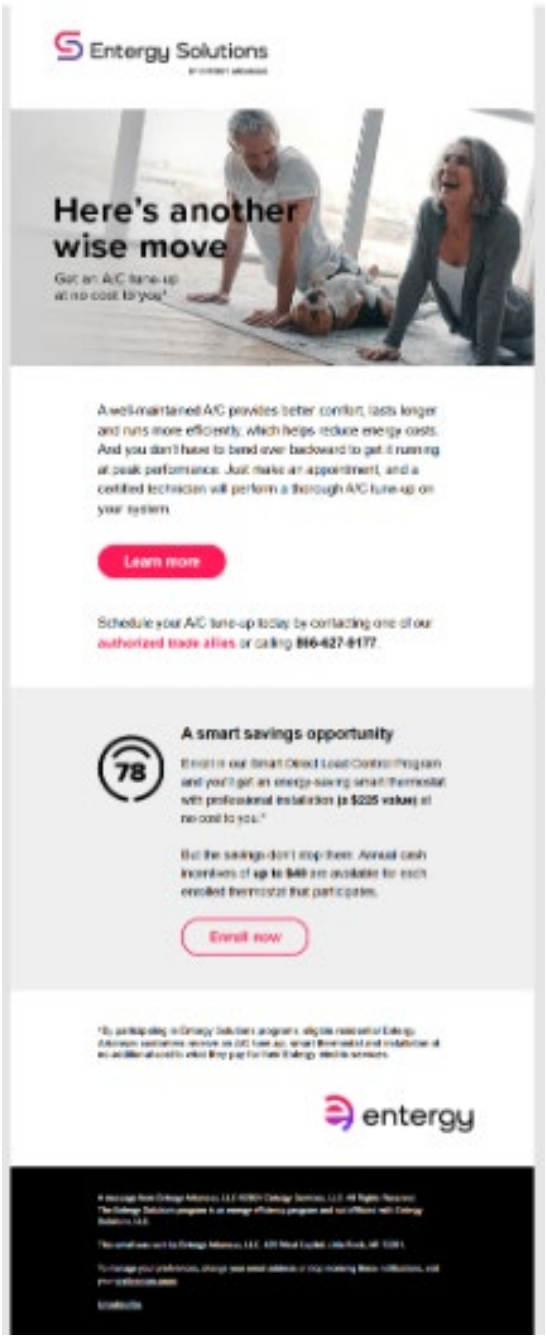
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3.1.13 August EAL Water Heater pilot email.pdf



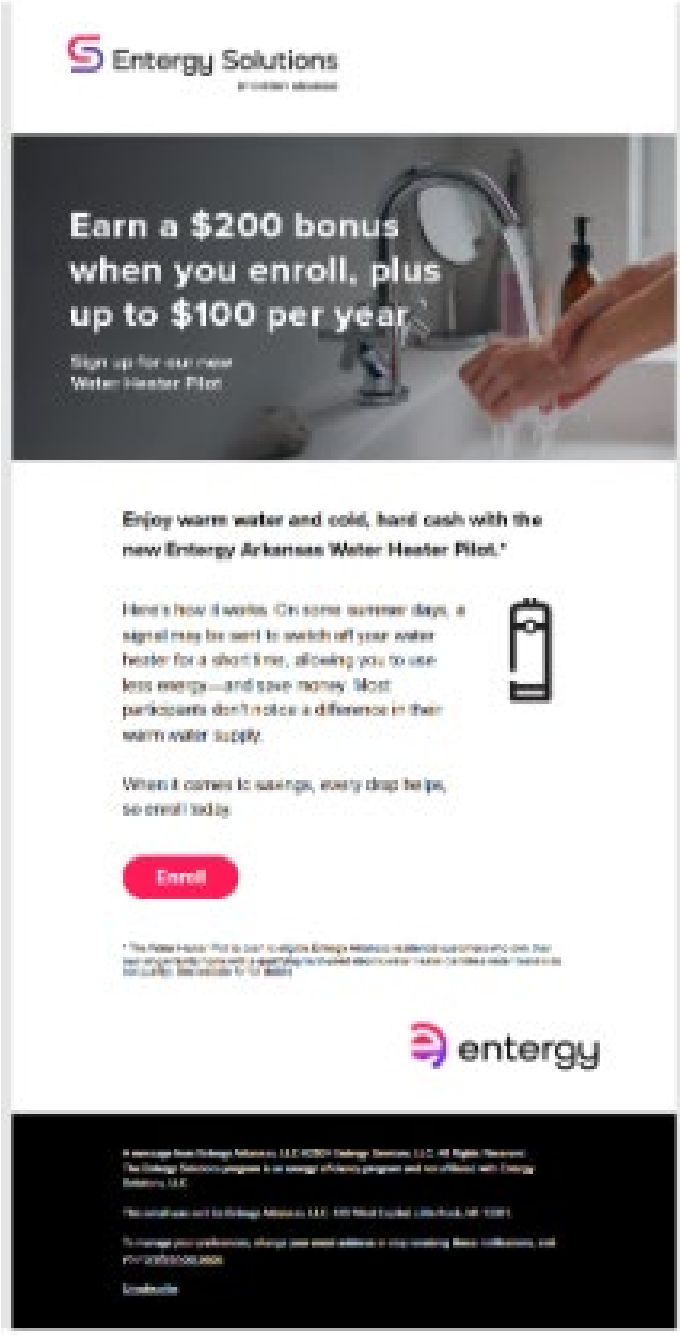
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3.1.14 EAL HES September ACTU Email.pdf



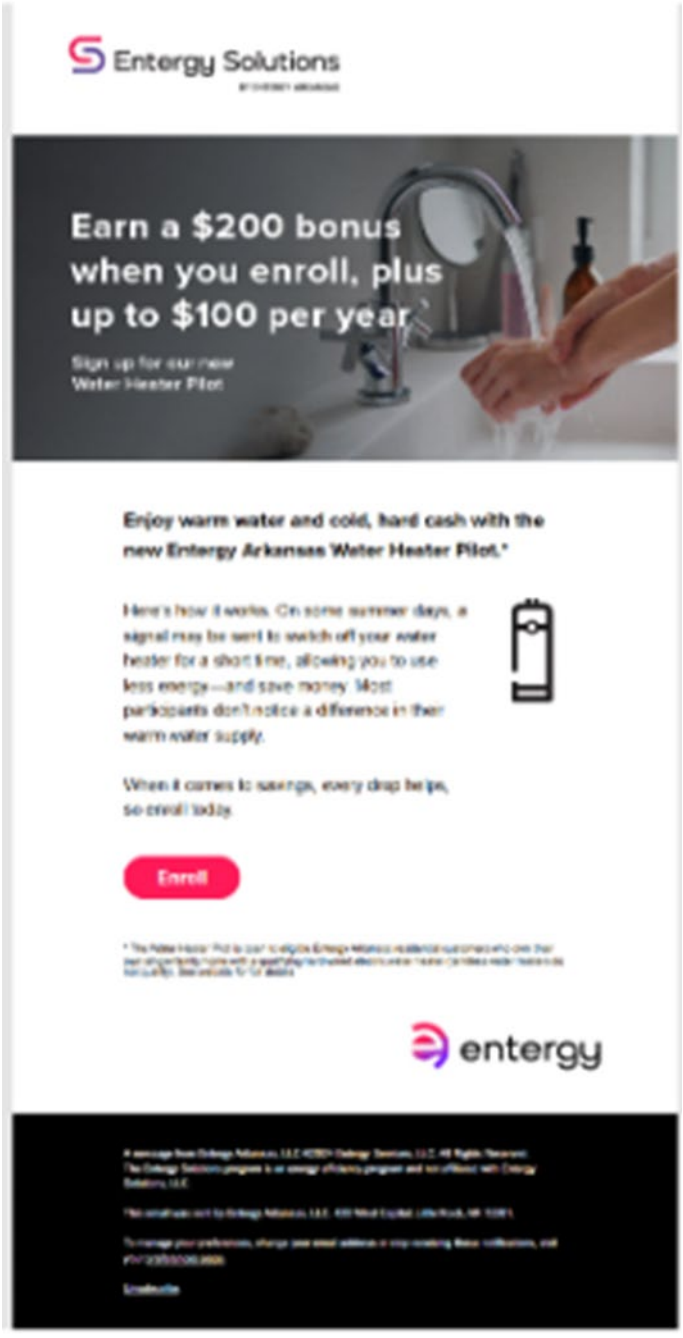
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3.1.15 EAL Sept Water Heater email.pdf



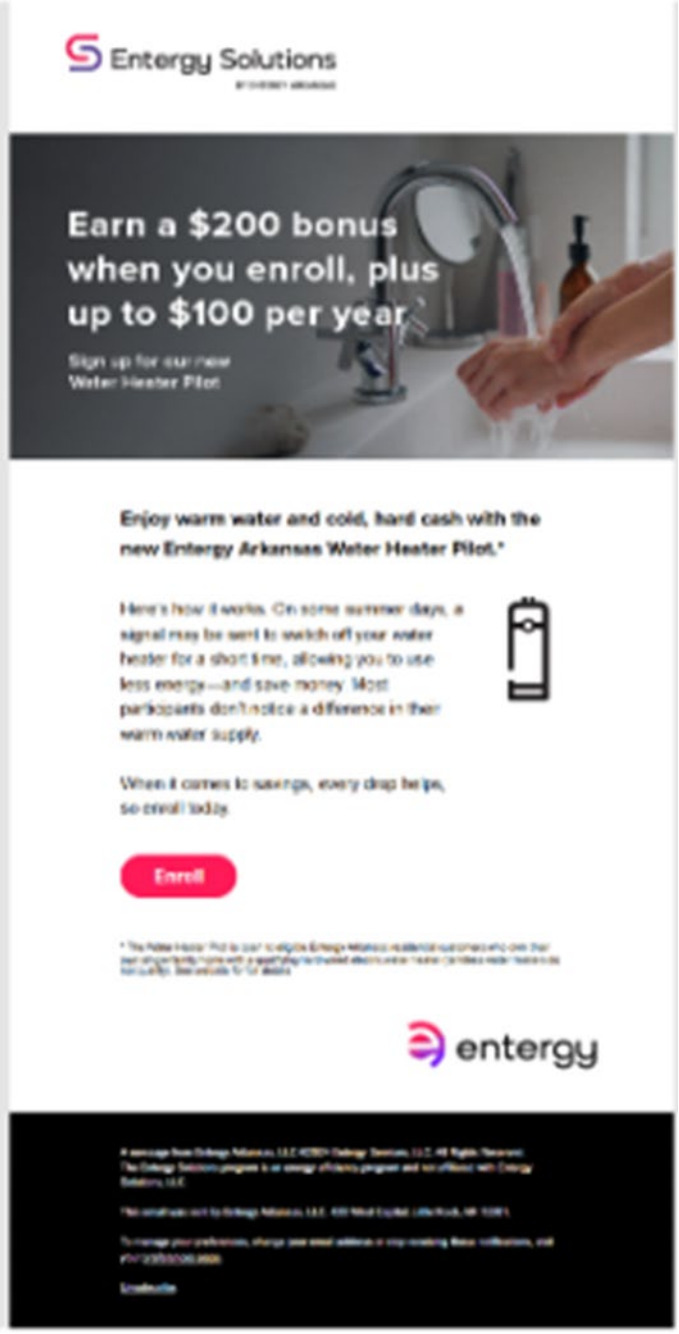
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3.1.16 EAL October Water Heater email.pdf



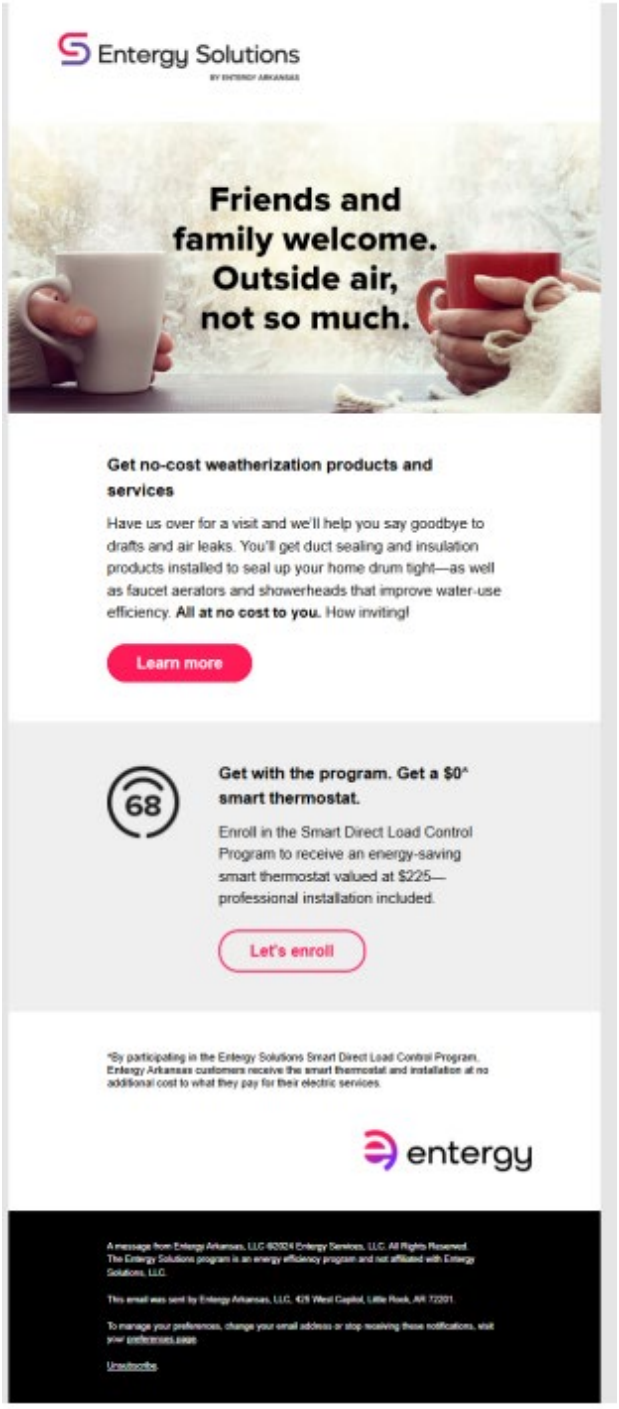
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3.1.17 EAL Nov Water Heater.pdf



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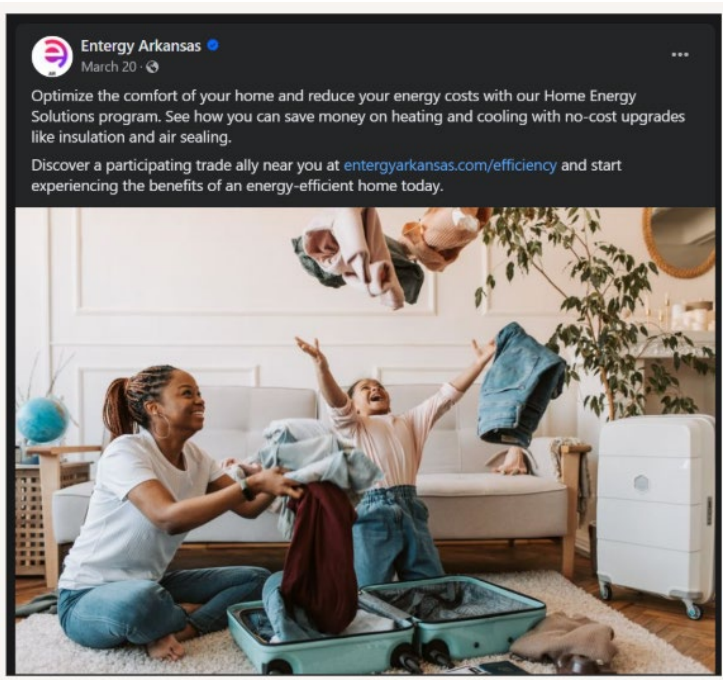
3.1.18 EAL HES December Weatherization email.pdf

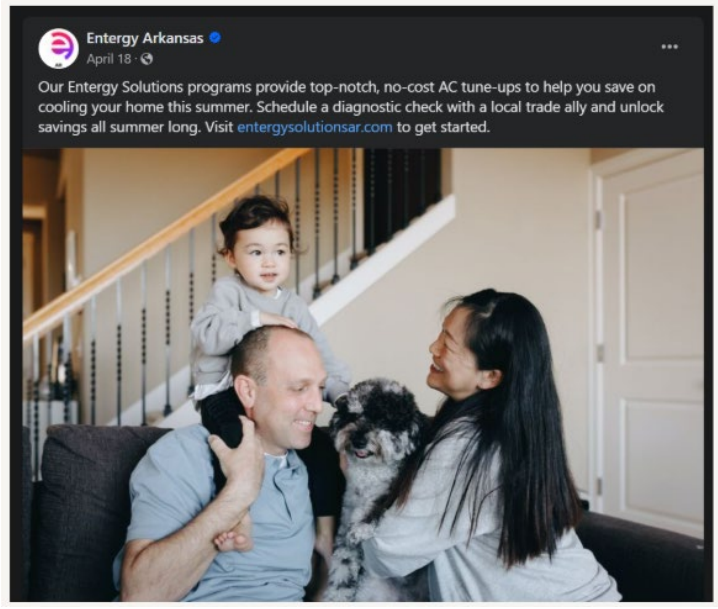


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3.1.19 HES Social Media 2024

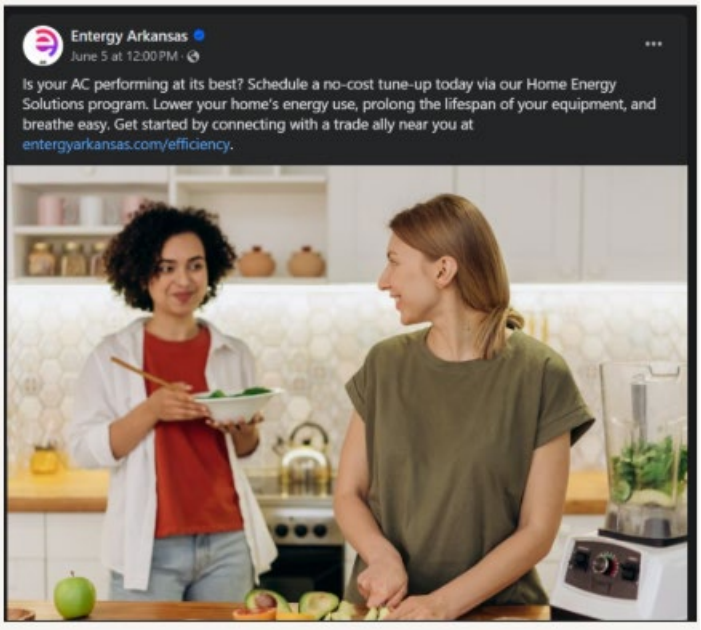








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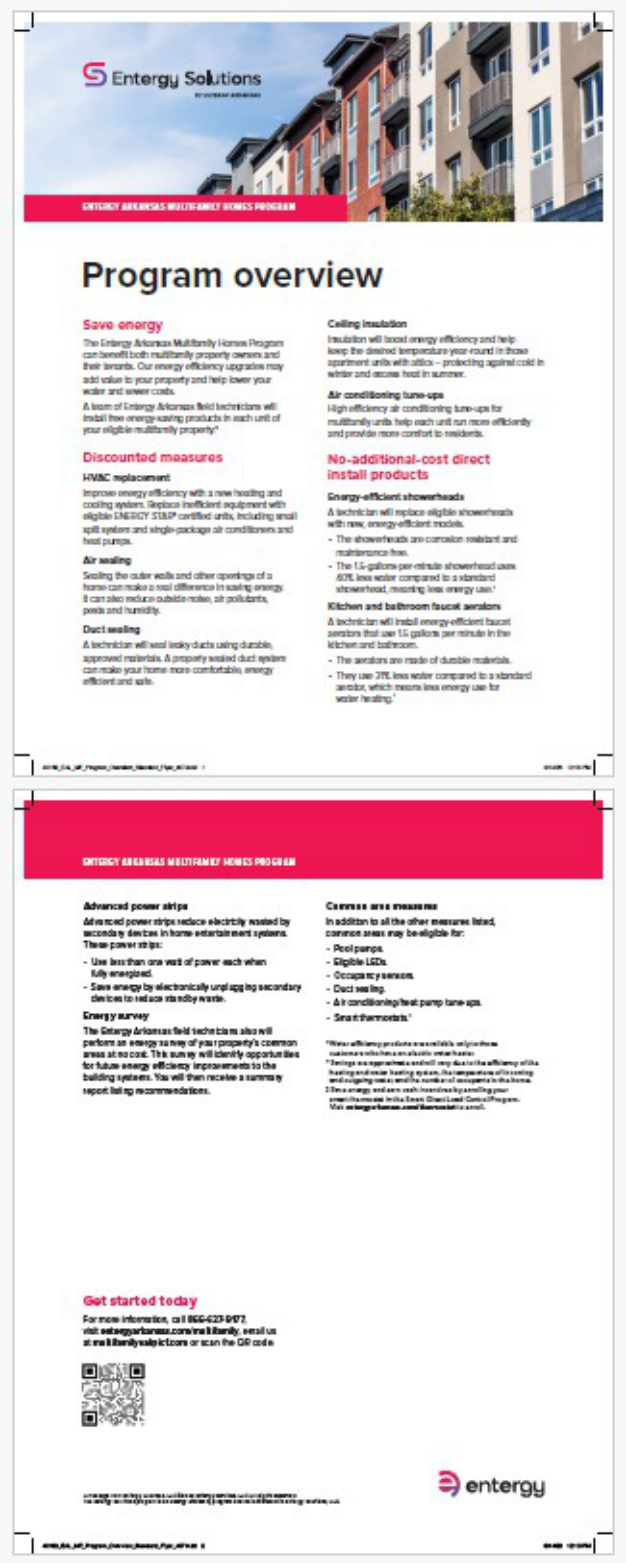




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3.2 Entergy Solutions for Multi-family

3.2.1 EAL_MF_Program_Overview_Standard_Flyer_v07_RELEASE_print.pdf



Entergy Solutions

ENTERGY ARKANSAS MULTIFAMILY HOMES PROGRAM

Program overview

Save energy

The Entergy Arkansas Multifamily Homes Program can benefit both multifamily property owners and their tenants. Our energy efficiency upgrades may add value to your property and help lower your water and sewer costs.

A team of Entergy Arkansas field technicians will install free energy-saving products in each unit of your eligible multifamily property.*

Discounted measures

HVAC replacement

Improve energy efficiency with a new heating and cooling system. Replace inefficient equipment with eligible ENERGY STAR® certified units, including small split systems and single-package air conditioners and heat pumps.

Air sealing

Sealing the outer walls and other openings of a home can make a real difference in saving energy. It can also reduce outside noise, air pollutants, pests and humidity.

Duct sealing

A technician will seal leaky ducts using durable, approved materials. A properly sealed duct system can make your home more comfortable, energy efficient and safe.

Ceiling insulation

Insulation will boost energy efficiency and help keep the desired temperature year-round in those apartment units with attics – protecting against cold in winter and excess heat in summer.

Air conditioning tune-ups

High efficiency air conditioning tune-ups for multifamily units help each unit run more efficiently and provide more comfort to residents.

No-additional-cost direct install products

Energy-efficient showerheads

A technician will replace eligible showerheads with new, energy-efficient models.

- The showerheads are corrosion resistant and maintenance free.
- The 1.5-gallons-per-minute showerhead uses 40% less water compared to a standard showerhead, meaning less energy use.†

Kitchen and bathroom faucet aerators

A technician will install energy-efficient faucet aerators that use 1.5 gallons per minute in the kitchen and bathroom.

- The aerators are made of durable materials.
- They use 31% less water compared to a standard aerator, which means less energy use for water heating.†

ENTERGY ARKANSAS MULTIFAMILY HOMES PROGRAM

Advanced power strips

Advanced power strips reduce electricity wasted by secondary devices in home entertainment systems. These power strips:

- Use less than one watt of power each when fully energized.
- Save energy by electronically unplugging secondary devices to reduce standby waste.

Energy survey

The Entergy Arkansas field technicians also will perform an energy survey of your property's common areas at no cost. This survey will identify opportunities for future energy efficiency improvements to the building systems. You will then receive a summary report listing recommendations.

Common area measures

In addition to all the other measures listed, common areas may be eligible for:

- Pool pumps.
- Eligible LEDs.
- Occupancy sensors.
- Duct sealing.
- Air conditioning/heat pump tune-ups.
- Smart thermostats.‡

*Water efficiency products are available only in those customer units that have an electric water heater.

†Savings are approximate and will vary due to the efficiency of the heating and water heating system, the temperature of incoming and outgoing water, and the number of occupants in the home.

‡This energy and water saving measure is provided by enrolling your smart thermostat in the Smart Cloud Load Control Program. Visit [redacted] to enroll.

Get started today

For more information, call 866-623-0473, visit [redacted] or scan the QR code.

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3.2.2 EAL Overview_Co-branded_Flyer_v07_RELEASE_print.pdf



Entergy Solutions

ENTERGY ARKANSAS MULTIFAMILY HOMES PROGRAM

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A team of Entergy Arkansas field technicians will install free energy-saving products in each unit of your eligible multifamily property.*

Discounted measures

HVAC replacement

Improve energy efficiency with a new heating and cooling system. Replace inefficient equipment with eligible ENERGY STAR® certified units, including small split systems and single-package air conditioners and heat pumps.

Air sealing

Sealing the outer walls and other openings of a home can make a real difference in saving energy. It can also reduce outside noise, air pollutants, pests and humidity.

Duct sealing

A technician will seal leaky ducts using durable, approved materials. A properly sealed duct system can make your home more comfortable, energy efficient and safe.

Ceiling insulation

Insulation will boost energy efficiency and help keep the desired temperature year-round in those apartment units with attics – protecting against cold in winter and excess heat in summer.

Air conditioning tune-ups

High-efficiency air conditioning tune-ups for multifamily units help each unit run more efficiently and provide more comfort to residents.

No-additional-cost direct install products

Energy-efficient showerheads

A technician will replace eligible showerheads with new, energy-efficient models.

- The showerheads are corrosion resistant and maintenance-free.
- The 1.5-gallons-per-minute showerhead uses 60% less water compared to a standard showerhead, meaning less energy use.†

Kitchen and bathroom faucet aerators

A technician will install energy-efficient faucet aerators that use 1.5 gallons per minute in the kitchen and bathroom.

- The aerators are made of durable materials.
- They use 31% less water compared to a standard aerator, which means less energy use for water heating.†



ENTERGY ARKANSAS MULTIFAMILY HOMES PROGRAM

Advanced power strips

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- Eligible LEDs.
- Occupancy sensors.
- Duct sealing.
- Air conditioning/heat pump tune-ups.
- Smart thermostats.†

*Where efficiency products are available, only at those customers who have an electric water heater.

†Savings are approximate and will vary due to the efficiency of the heating and water heating system, the temperature of incoming and outgoing water, and the number of occupants in the home. ‡To be eligible to receive energy and earn cash incentives by enrolling your smart thermostat in the Smart Cloud Load Control Program. Visit entergyarkansas.com/thermostat to enroll.

Get started today

For more information, call 866-623-9172, visit entergyarkansas.com/multifamily, email us at multifamily@apicorp.com or scan the QR code.

Company Name
Phone Number
Email
Website

entergy

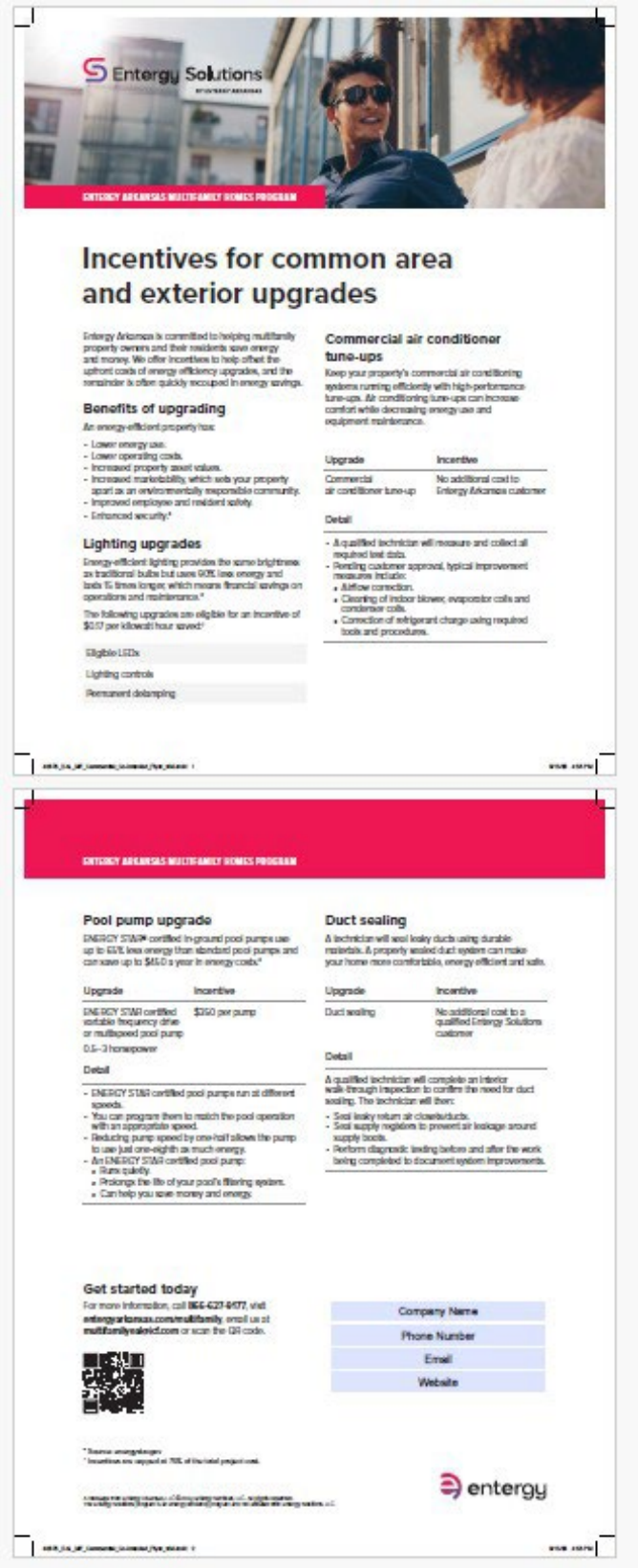
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3.2.3 EAL_MF_Commercial_Standard_Flyer_v04_RELEASE_print.pdf



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3.2.4 40373_EAL_MF_Commercial_Co-branded_Flyer_v04_RELEASE_print.pdf



Entergy Solutions

ENTERGY ARKANSAS MULTIFAMILY HOMES PROGRAM

Incentives for common area and exterior upgrades

Entergy Arkansas is committed to helping multifamily property owners and their residents save energy and money. We offer incentives to help offset the upfront costs of energy efficiency upgrades, and the remainder is often quickly recouped in energy savings.

Benefits of upgrading

An energy-efficient property has:

- Lower energy use.
- Lower operating costs.
- Increased property asset values.
- Increased marketability, which sets your property apart as an environmentally responsible community.
- Improved employee and resident safety.
- Enhanced security.*

Lighting upgrades

Energy-efficient lighting provides the same brightness as traditional bulbs but uses 90% less energy and lasts 15 times longer, which means financial savings on operations and maintenance.*

The following upgrades are eligible for an incentive of $0.07 per kilowatt hour saved:*

Eligible LEDs
Lighting controls
Permanent delamping

Commercial air conditioner tune-ups

Keep your property's commercial air conditioning systems running efficiently with high-performance tune-ups. Air conditioning tune-ups can increase comfort while decreasing energy use and equipment maintenance.

Upgrade	Incentive
Commercial air conditioner tune-up	No additional cost to Entergy Arkansas customer

Detail

- A qualified technician will measure and collect all required test data.
- Pending customer approval, typical improvement measures include:
  - Airflow correction.
  - Cleaning of indoor blower, evaporator coils and condenser coils.
  - Correction of refrigerant charge using required tools and procedures.

ENTERGY ARKANSAS MULTIFAMILY HOMES PROGRAM

Pool pump upgrade

ENERGY STAR® certified in-ground pool pumps use up to 65% less energy than standard pool pumps and can save up to $650 a year in energy costs.*

Upgrade	Incentive
ENERGY STAR certified variable frequency drive or multispeed pool pump 0.5–3 horsepower	$350 per pump

Detail

- ENERGY STAR certified pool pumps run at different speeds.
- You can program them to match the pool operation with an appropriate speed.
- Reducing pump speed by one-half allows the pump to use just one-eighth as much energy.
- An ENERGY STAR certified pool pump:
  - Runs quietly.
  - Prolongs the life of your pool's filtering system.
  - Can help you save money and energy.

Duct sealing

A technician will seal leaky ducts using durable materials. A properly sealed duct system can make your home more comfortable, energy efficient and safe.

Upgrade	Incentive
Duct sealing	No additional cost to a qualified Entergy Solutions customer

Detail

A qualified technician will complete an interior walk-through inspection to confirm the need for duct sealing. The technician will then:

- Seal leaky return air closets/ducts.
- Seal supply registers to prevent air leakage around supply boots.
- Perform diagnostic testing before and after the work being completed to document system improvements.

Get started today

For more information, call 866-627-9477, visit **entergyarkansas.com/multifamily**, email us at **multifamilyesleric@.com** or scan the QR code.

Company Name

Phone Number

Email

Website

* Source: energy.gov

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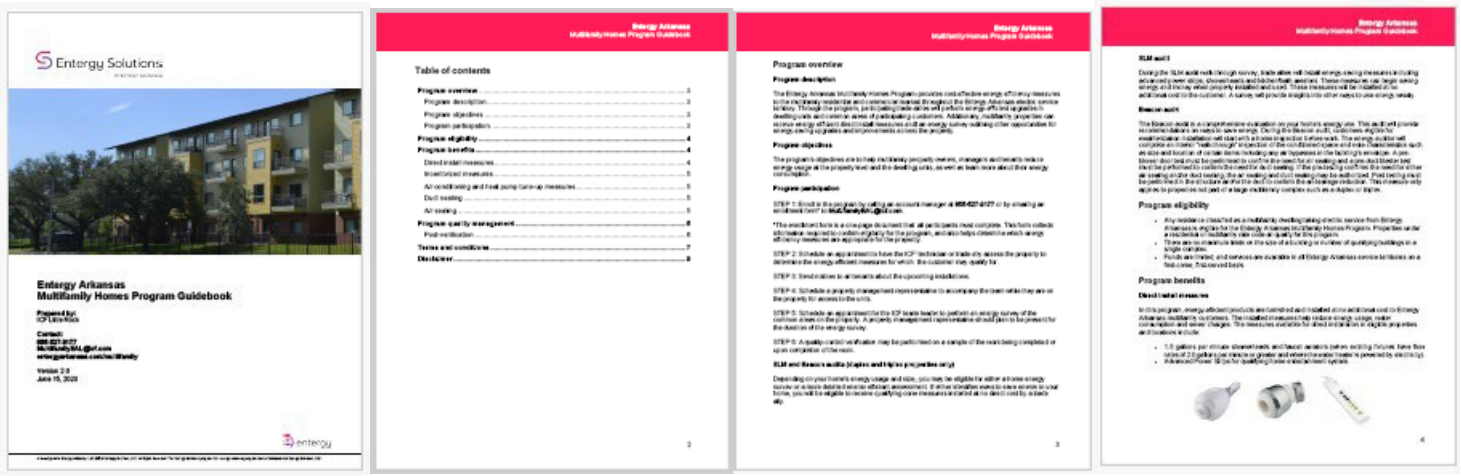
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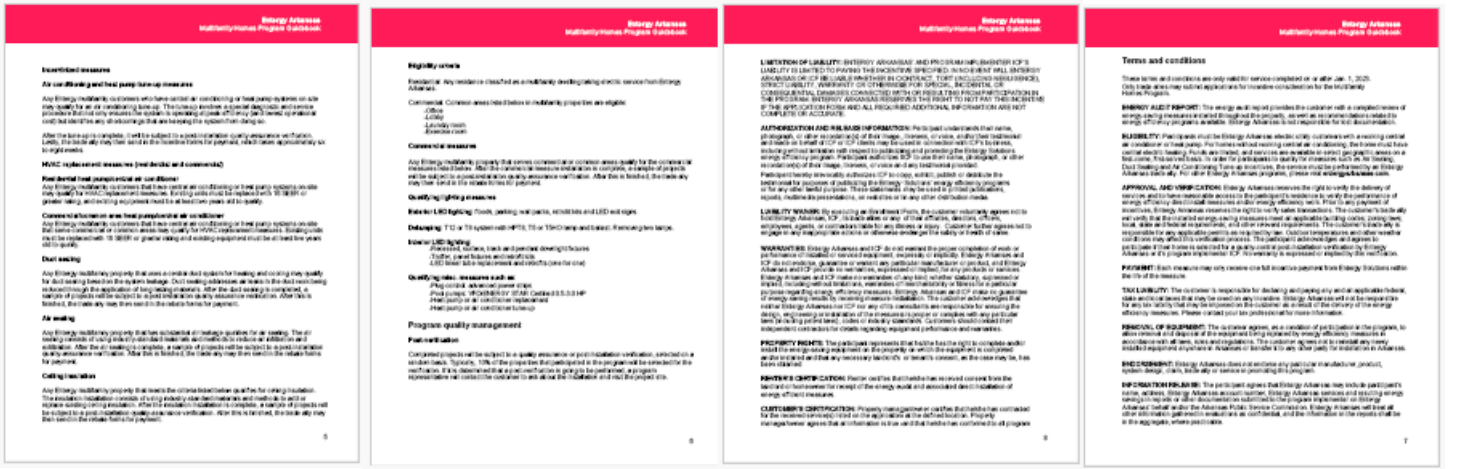
3.2.5 EAL_MF_Participation Certificate_2024_TEMPLATE_RELEASE.pdf

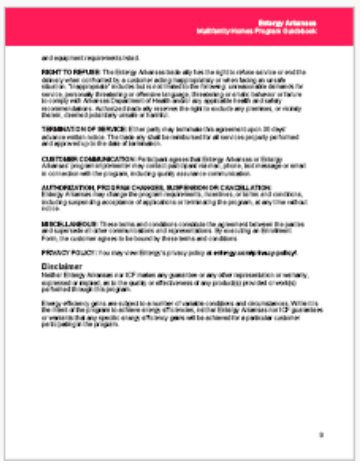


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3.2.6 MF Guidebook 2024 RELEASE



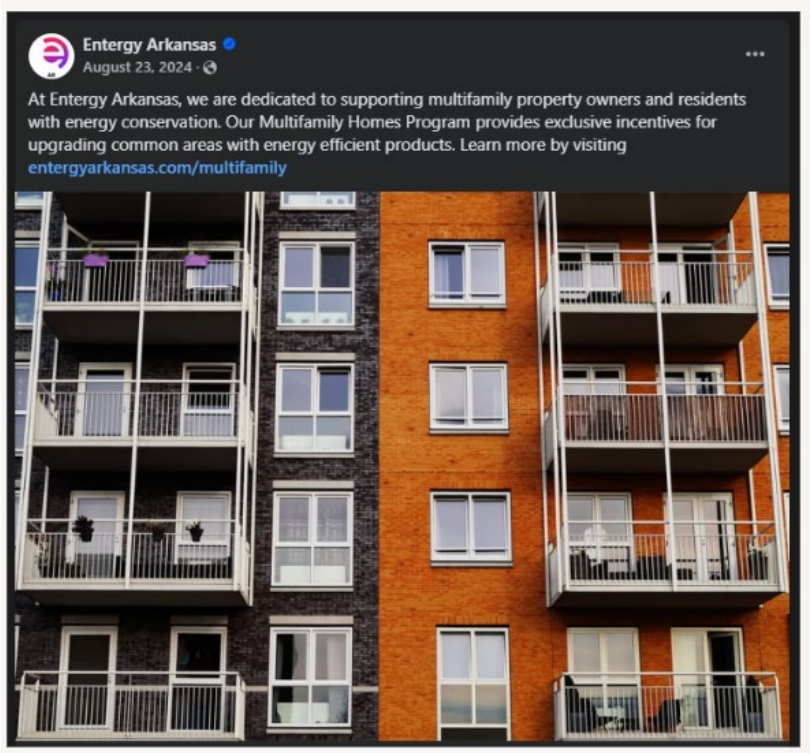




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3.2.7 Multifamily Social Media





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3.3 Entergy Solutions for Manufactured Homes

3.3.1 EAL MA Newsletter Article _Sept 2024



Manufactured Homes and Energy-Saving Solutions

The Entergy Arkansas **Manufactured Homes Program** offers a range of energy-saving products and services to owners and residents, faucet aerators to advanced power strips. Enroll today and receive weatherization upgrades, like air sealing and duct sealing, to help keep your home comfortable and energy efficient all year long.

Home weatherization upgrades provide a variety of benefits, including:

- Energy efficiency and comfort. Keep your home cool by sealing potential air leaks. This helps lower the cost of running your AC.
- Air quality. A well-sealed home keeps out more humidity, dust, pollen and pests.
- Safety. Leaky ducts can allow gases from furnaces, stoves and water heaters to enter rooms throughout your home. Sealing leaks reduce this risk.

Start saving on energy costs today by improving the energy efficiency of your home. Visit **entergyarkansas.com/manufactured** to learn more about this program and find a participating trade ally.

3.3.2 EAL Newsletter Dec 2024



Manufactured Homes: Give the Gift of Winter Comfort

Achieve energy savings this winter and beyond with our Manufactured Homes Program. Did you know that air leakage from your home can result in substantial energy waste? Our Entergy Solutions Manufactured Homes Program offers weatherization measures to improve your home's energy efficiency and alleviate concerns. By sealing your home effectively, you can save energy, reduce costs, and enhance comfort and durability.

Enrolling in the Manufactured Homes Program grants you eligibility for energy-saving measures such as air sealing, duct sealing, and more. These upgrades not only contribute to your long-term energy savings but also ensure your comfort. Additionally, as part of this program, energy-saving products, high-efficiency showerheads and high-efficiency kitchen and bath aerators can be installed in your home at no extra cost.

Weatherization upgrades to your home deliver the following benefits:

1. Energy efficiency: Sealing air leaks enhances your home's overall efficiency, leading to potential energy savings.
2. Home comfort: By addressing air leaks, common comfort issues like excessively cold or hot rooms can be mitigated.
3. Air quality: A well-sealed home acts as a barrier against humidity, dust, pollen, and pests, improving indoor air quality.

3.3.3 EAL_MA_Program_Overview_Flyer_EN-SP_v09_Release_Print.pdf

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Reduce energy usage and save money

Community managers and residents of eligible manufactured homes can get an energy audit, installation of energy-saving products and recommendations for additional energy efficiency upgrades—all at no cost.

Start with a Home Energy Assessment

It begins with an assessment of the home's energy use. Depending on the results, the following products may be installed at no cost.

Showerheads

A technician will replace eligible showerheads with new energy-efficient models that are corrosion-resistant and maintenance-free. The 1.5-gallons-per-minute showerhead uses 40% less water than a standard model, which helps save energy on water heating.

Kitchen and bathroom faucet aerators

Durable faucet aerators that use just 1.5 gallons per minute may be installed. They use 31% less water than a standard model, meaning less energy is used for water heating.

Advanced power strips

Advanced power strips reduce energy use by cutting power to electronics while they're in standby mode. This prevents them from using energy when not in use. Perfect for home office setups and entertainment centers.

Get incentives for upgrades

As part of the energy assessment, recommendations will be made for additional ways to improve energy efficiency. Some are eligible for incentives that typically cover the full cost.

Duct sealing

A properly sealed duct system can make homes more comfortable, energy efficient and safe.

Air sealing

Sealing gaps where air can pass through can lower energy costs and reduce outside noise, air pollutants, pests and humidity.

High efficiency air conditioning tune-ups

A well-tuned system runs more efficiently and effectively, providing improved comfort during warm weather.

Smart thermostat

Controlling home temperature settings with a smart thermostat can help save energy and keep everyone comfortable.

Enroll your smart thermostat in the Smart Direct Load Control program and earn even more incentives. Sign up at entergyarkansas.com/thermostat.

Schedule an audit today

For more information, call **866-627-9177**, visit **entergyarkansas.com/manufactured**, email **manufacturedealer@cct.com** or scan the QR code.

Some efficiency products are available only to customers who have an electric water heater.

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The Entergy Solutions program is an energy efficiency program and not affiliated with Entergy Solutions, LLC.

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3.3.4 EAL_MA_Program_Overview_Co-Branded_Flyer_EN-SP_v09_Release_Print.pdf



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AREA FOR CO-BRANDING CONTACT INFORMATION

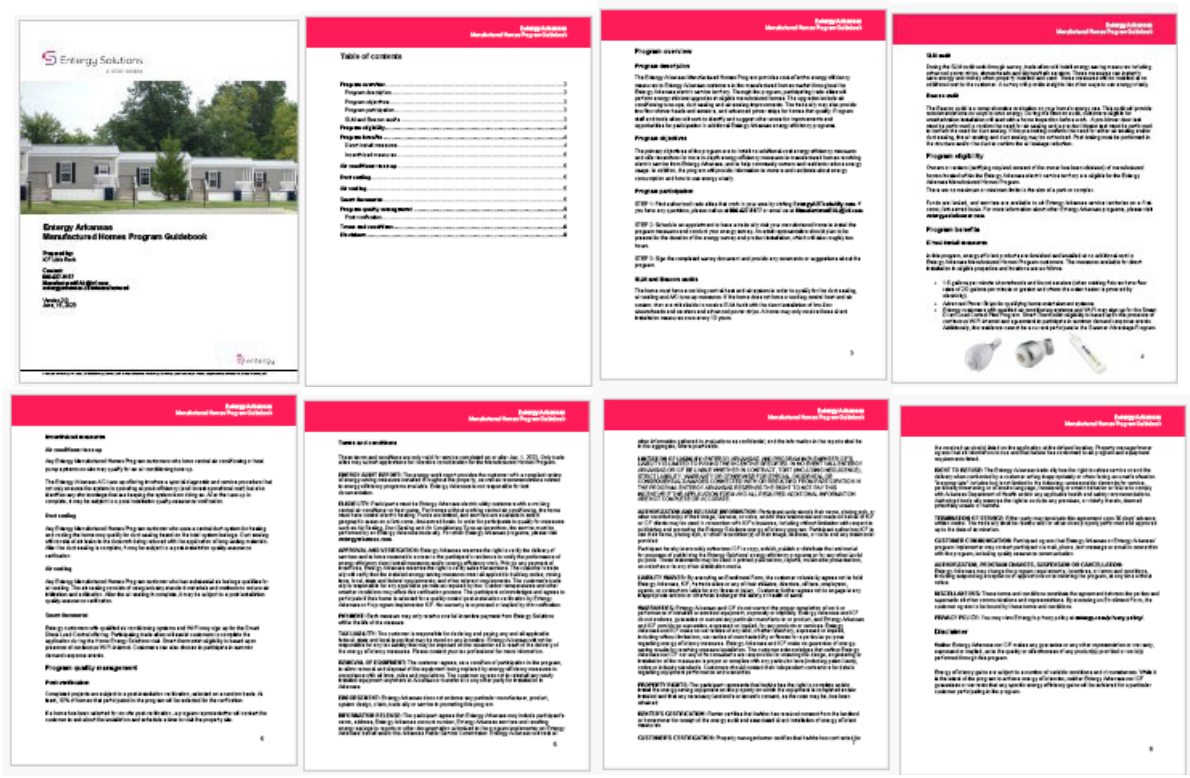
Select efficiency products are available only to customers who have an electric water heater.

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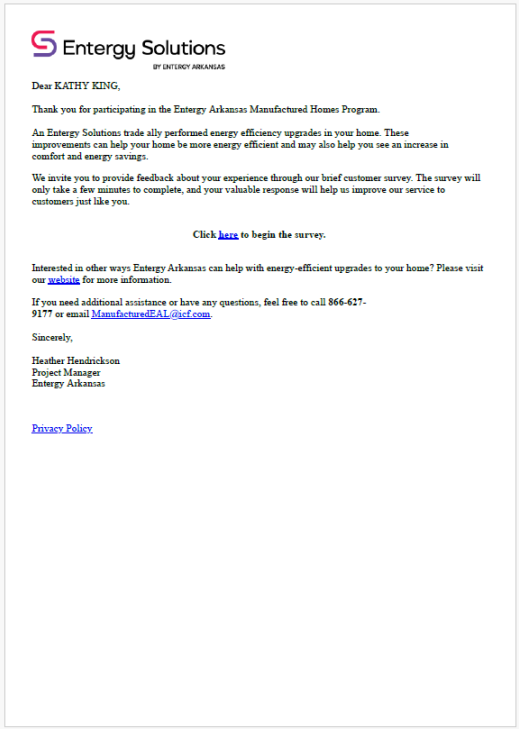
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3.3.5 MA Guidebook 2024 RELEASE

Arkansas Public Service Commission: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



3.3.6 Manufactured Homes Survey Email 2024



Entergy Solutions
BY ENTERGY ARKANSAS

Dear KATHY KING,

Thank you for participating in the Entergy Arkansas Manufactured Homes Program.

An Entergy Solutions trade ally performed energy efficiency upgrades in your home. These improvements can help your home be more energy efficient and may also help you see an increase in comfort and energy savings.

We invite you to provide feedback about your experience through our brief customer survey. The survey will only take a few minutes to complete, and your valuable response will help us improve our service to customers just like you.

Click here to begin the survey.

Interested in other ways Entergy Arkansas can help with energy-efficient upgrades to your home? Please visit our website for more information.

If you need additional assistance or have any questions, feel free to call 866-627-9177 or email ManufacturedEAL@icf.com.

Sincerely,

Heather Hendrickson
Project Manager
Entergy Arkansas

Privacy Policy

3.3.7 Entergy Solutions Manufactured Homes Program Customer Satisfaction Survey 2024

APSC FILED Time: 5/1/2025 11:58:39 AM: Report 07-085-TF-1 of 5 - Arkansas Public Service Commission



Entergy Solutions Manufactured Homes Program Customer Satisfaction Survey

3.3.8 Manufactured Homes Survey Letter 2024

ARKANSAS Filed: 5/1/2025 11:47:22 AM Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

Entergy Solutions
BY ENTERGY ARKANSAS

Customer Sample
123 Main St.
HOMETOWN, AR 12345

Dear Customer,

Thank you for participating in the Entergy Arkansas Manufactured Homes Program.

An Entergy Solutions trade ally performed energy efficiency upgrades in your home. These improvements can help your home be more energy efficient and may also help you see an increase in comfort and energy savings.

We invite you to provide feedback about your experience through our brief customer survey. The survey will only take a few minutes to complete, and your valuable response will help us improve our service to customers just like you.

Please go to **surveymonkey.com/r/3TW65S6** or use your smartphone to scan the QR code below to begin the survey.

Interested in other ways Entergy Arkansas can help with energy-efficient upgrades to your home? Please visit **entergysolutionsar.com** for more information.

If you need additional assistance or have any questions, feel free to call **866-627-9177** or email **ManufacturedEAL@icf.com**.

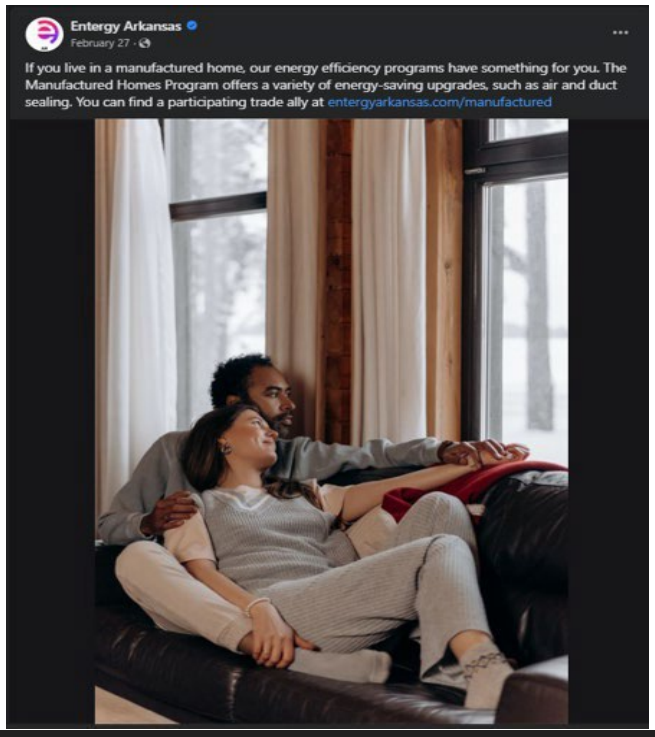
Sincerely,

Heather Hendrickson
Project Manager
Entergy Arkansas

APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.3.9 Manufactured Homes Social Media 2024

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APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.4 Low-Income Solutions

3.4.1 2024 Low Income Bill Insert

Entergy Solutions
BY ENTERGY ARKANSAS

Energy savings worth smiling about

Entergy Solutions programs can help you save energy and money while improving your home's comfort all year long—at no additional cost to you.



Save all year with energy upgrades at no additional cost

Qualifying customers can take advantage of home upgrades, services and products, including:

- Home energy assessments
- Duct sealing
- Air sealing
- Ceiling insulation
- A/C tune-ups
- Advanced power strips
- Low-flow showerheads and aerators

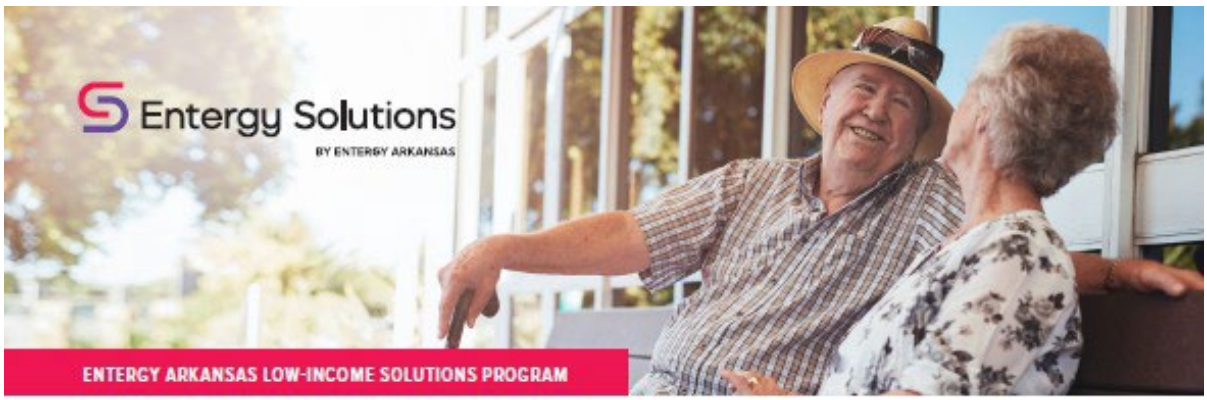
For more info on all the ways you can save, check out
entergyarkansas.com/residentialprograms
or call **866-627-9177**.



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E-062403

APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.4.2 _EAL_LIS_Program_Overview_English _Flyer_v09_Release_Print.pdf



More comfort, more savings

The Low-Income Solutions program can help make your home more energy efficient and comfortable year-round, while saving you energy and money—all at no additional cost to you.

Schedule a Home Energy Assessment

Start with a Home Energy Assessment to determine how your home uses energy and how you can use less. During the assessment, you also might receive energy-saving products such as advanced power strips, low-flow showerheads and aerators (for customers with electric water heaters).

Take advantage of upgrades

Based on your Home Energy Assessment, you also might be eligible for a variety of energy efficiency upgrades installed by one of our trade allies. Upgrades can include:

- Air sealing
- Duct sealing
- Ceiling insulation
- Smart thermostat
- High-performance air conditioning tune-up

Save even more with your smart thermostat

Eligible customers can get a smart thermostat with professional installation—a $225 value. If you also enroll in the **Smart Direct Load Control program**, you'll get an annual incentive of up to $40 for participating in conservation periods. If you live in a single-family or manufactured home with central heating and air and have in-home Wi-Fi service, you may be eligible to participate.

You may qualify

If you are an Entergy Arkansas residential customer (renter or owner) who lives in a single-family, multifamily or manufactured home, you may qualify if you are eligible for the Low-Income Home Energy Assistance program (LIHEAP), regardless of age, or if you are 65 years of age or older.

"The Entergy Solutions team fixed the leaks in my ducts. I can't say enough about the program. It's wonderful. It has saved me a lot of money, and I am very comfortable in my home."

— Entergy Arkansas customer

Get started today

Contact the Energy Efficiency Solutions Center at **866-627-9177**, or email **lowincomesolutionseal@icf.com**.

Visit **entergyarkansas.com/lowincome** to learn more, or scan the QR code.

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APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.4.3 _EAL_LIS_Program_Overview_Spanish Flyer_v09_Release_Print.pdf



Más comodidad, más ahorro

El programa Soluciones para personas de bajos recursos puede ayudarle a que el consumo de energía en su hogar sea más eficiente y más cómodo durante todo el año, y a su vez, ahorra energía y dinero, todo esto sin costo adicional para usted.

Solicite una evaluación de energía de su hogar

Comience con una evaluación de energía donde se determinará cómo se está utilizando la energía en su hogar y maneras para reducir el consumo eléctrico. Durante la evaluación, también podra recibir productos para ahorrar energía, como regletas de enchufes avanzados, cabezales de ducha de bajo caudal y aireadores (para clientes con calentadores de agua eléctricos).

Aproveche las mejorías

Después de la evaluación de energía de su hogar, puede calificar para recibir mejorías de eficiencia energética que son instaladas por uno de nuestros aliados comerciales. Las mejorías pueden incluir:

- Sellado del aire
- Sellado de conductos
- Aislamiento del techo
- Termostato inteligente
- Mantenimiento del aire acondicionado de alto rendimiento

Empiece hoy mismo

Póngase en contacto con el Centro de Soluciones de Eficiencia Energética al **866-627-9177**, o envíe un correo electrónico a **lowincomesolutionseal@icf.com**.

Visite **entergyarkansas.com/lowincome** para obtener más información, o escanee el código QR.

Ahorre aún más con su termostato inteligente

Los clientes que cumplan con los requisitos pueden adquirir un termostato inteligente e instalación profesional; un valor de $225. Además si se inscribe en el **programa Smart Direct Load Control**, recibiría un incentivo anual de hasta $40 por participar en los periodos de conservación. Si vive en una vivienda unifamiliar o prefabricada con calefacción y aire acondicionado central y si su hogar dispone de servicio de internet Wi-Fi , podría ser elegible para participar en el programa.

Podría cumplir con los requisitos

Si usted es un cliente residencial de Entergy Arkansas (inquilino o propietario) que vive en una vivienda unifamiliar, multifamiliar o prefabricada y es elegible para el Programa de Asistencia de Energía para Hogares de Bajos Recursos (LIHEAP), independientemente de su edad.

"El equipo de Entergy Solutions arregló las fugas de mis conductos de aire. Solo puedo mencionar cosas muy buenas del programa. Es maravilloso. Me he ahorrado mucho dinero y estoy muy cómodo en mi hogar".

- Cliente de Entergy Arkansas

entergy

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El programa de Entergy Solutions es un programa de eficiencia energética y no está afiliado a Entergy Solutions, LLC.

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3.4.4 2024_EAL_LIS_Program_Overview_Co-branded_Flyer_English



More comfort, more savings

The Low-Income Solutions program can help make your home more energy efficient and comfortable year-round, while saving you energy and money—all at no additional cost to you.

Schedule a home energy assessment

Start with a home energy assessment to determine how your home uses energy and how you can use less. During the assessment, you also might receive energy-saving products such as advanced power strips, low-flow showerheads and aerators (for customers with electric water heaters).

Take advantage of upgrades

Based on your home energy assessment, you also might be eligible for a variety of energy efficiency upgrades installed by one of our trade allies. Upgrades can include:

- Air sealing
- Duct sealing
- Ceiling insulation
- Smart thermostat
- High-performance air conditioning tune-up

Save even more with your smart thermostat

Eligible customers can get a smart thermostat with professional installation—a $225 value. If you also enroll in the **Smart Direct Load Control Program**, you'll get an annual incentive of up to $40 for participating in conservation periods. If you live in a single-family or manufactured home with central heating and air and have in-home Wi-Fi service, you may be eligible to participate.

You may qualify

If you are an Entergy Arkansas residential customer (renter or owner) who lives in a single-family, multifamily or manufactured home, you may qualify if you are eligible for the Low-Income Home Energy Assistance Program (LIHEAP), regardless of age, or if you are 65 years of age or older.

"The Entergy Solutions team fixed the leaks in my ducts. I can't say enough about the program. It's wonderful. It has saved me a lot of money, and I am very comfortable in my home."

— Entergy Arkansas customer

Get started today

Contact the Energy Efficiency Solutions Center at **866-627-9177**, or email **lowincomesolutionsealrict.com**.

Visit **entergyarkansas.com/lowincome** to learn more, or scan the QR code.

AREA FOR CO-BRANDING CONTACT INFORMATION

entergy

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3.4.5 2024_EAL_LIS_Program_Overview_Co-Branded_Spanish



More comfort, more savings

The Low-Income Solutions program can help make your home more energy efficient and comfortable year-round, while saving you energy and money—all at no additional cost to you.

Schedule a Home Energy Assessment

Start with a Home Energy Assessment to determine how your home uses energy and how you can use less. During the assessment, you also might receive energy-saving products such as advanced power strips, low-flow showerheads and aerators (for customers with electric water heaters).

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"The Entergy Solutions team fixed the leaks in my ducts. I can't say enough about the program. It's wonderful. It has saved me a lot of money, and I am very comfortable in my home."

— Entergy Arkansas customer

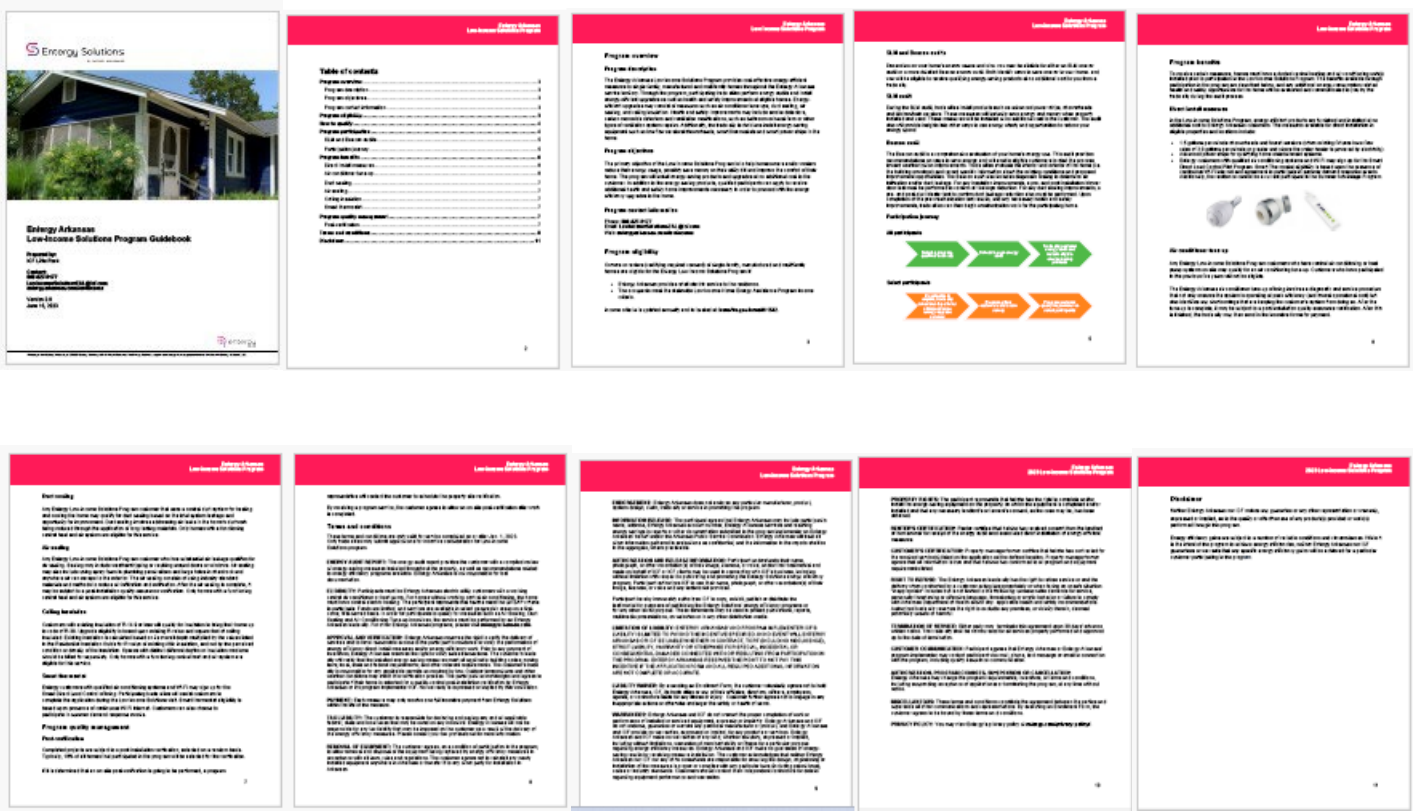
AREA FOR CO-BRANDING CONTACT INFORMATION

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3.4.6 LIS Guidebook 2024 RELEASE



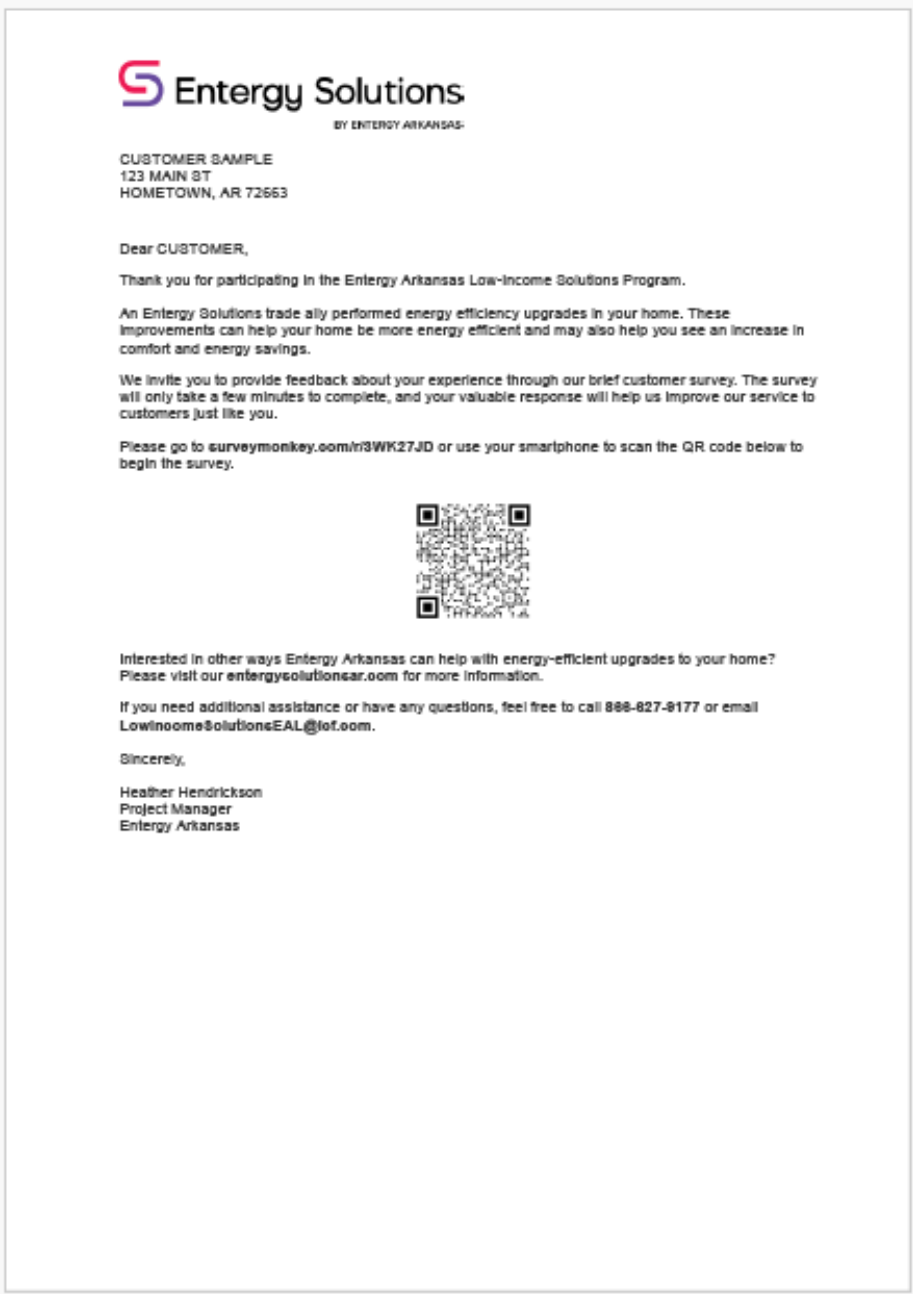
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.4.7 Low Income Solutions Customer Satisfaction Survey 2023



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.4.8 LIS Customer Satisfaction Survey Letter



Entergy Solutions
BY ENTERGY ARKANSAS

CUSTOMER SAMPLE
123 MAIN ST
HOMETOWN, AR 72663

Dear CUSTOMER,

Thank you for participating in the Entergy Arkansas Low-Income Solutions Program.

An Entergy Solutions trade ally performed energy efficiency upgrades in your home. These improvements can help your home be more energy efficient and may also help you see an increase in comfort and energy savings.

We invite you to provide feedback about your experience through our brief customer survey. The survey will only take a few minutes to complete, and your valuable response will help us improve our service to customers just like you.

Please go to **surveymonkey.com/r/3WK27JD** or use your smartphone to scan the QR code below to begin the survey.

Interested in other ways Entergy Arkansas can help with energy-efficient upgrades to your home? Please visit our **entergysolutionsar.com** for more information.

If you need additional assistance or have any questions, feel free to call **888-827-9177** or email **LowIncomeSolutionsEAL@tlof.com**.

Sincerely,

Heather Hendrickson
Project Manager
Entergy Arkansas

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3.4.9 LIS Customer Satisfaction Survey Email

Entergy Solutions
BY ENTERGY ARKANSAS

Dear CUSTOMER,

Thank you for participating in the Entergy Arkansas Low-Income Solutions Program.

An Entergy Solutions trade ally performed energy efficiency upgrades in your home. These improvements can help your home be more energy efficient and may also help you see an increase in comfort and energy savings.

We invite you to provide feedback about your experience through our brief customer survey. The survey will only take a few minutes to complete, and your valuable response will help us improve our service to customers just like you.

Click here to begin the survey.

Interested in other ways Entergy Arkansas can help with energy-efficient upgrades to your home? Please visit our website for more information.

If you need additional assistance or have any questions, feel free to call **866-627-9177** or email LowIncomeSolutionsEAL@icf.com.

Sincerely,

Heather Hendrickson
Project Manager
Entergy Arkansas

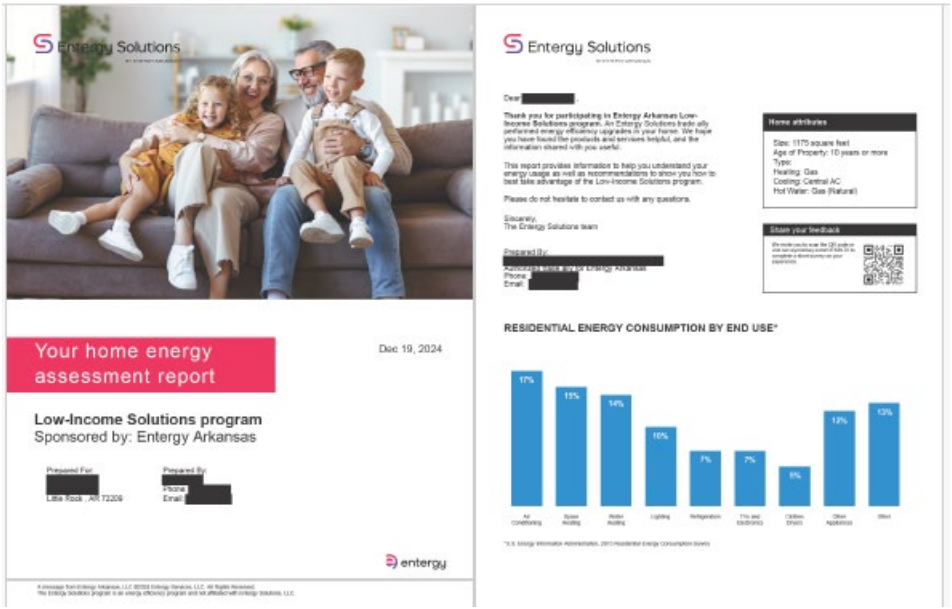
Privacy Policy

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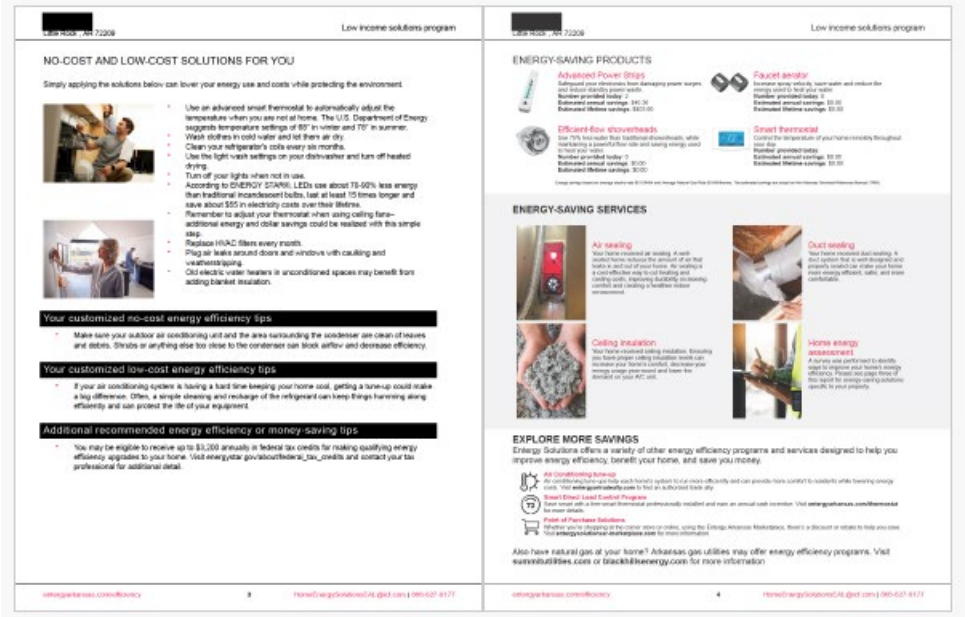
3.4.10 LIS Social Media 2024



3.4.11 Home Energy Report Low Income Redacted 2024



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



[redacted]
Little Rock, AR 72209

Low income solutions program

NO-COST AND LOW-COST SOLUTIONS FOR YOU

Simply applying the solutions below can lower your energy use and costs while protecting the environment.

- Use an advanced smart thermostat to automatically adjust the temperature when you are not at home. The U.S. Department of Energy suggests temperature settings of 80° in winter and 78° in summer.
- Wash clothes in cold water and let them air dry.
- Clean your refrigerator's coils every six months.
- Use the light wash settings on your dishwasher and turn off heated drying.
- Turn off your lights when not in use.
- According to ENERGY STAR®, LEDs use about 75-90% less energy than traditional incandescent bulbs, last at least 15 times longer and save about $55 in electricity costs over their lifetime.
- Remember to adjust your thermostat when using ceiling fans– additional energy and dollar savings could be realized with this simple step.
- Replace HVAC filters every month.
- Plug air leaks around doors and windows with caulking and weatherstripping.
- Old electric water heaters in unconditioned spaces may benefit from adding blanket insulation.

Your customized no-cost energy efficiency tips

- Make sure your outdoor air conditioning unit and the area surrounding the condenser are clean of leaves and debris. Shrubs or anything else too close to the condenser can block airflow and decrease efficiency.

Your customized low-cost energy efficiency tips

- If your air conditioning system is having a hard time keeping your home cool, getting a tune-up could make a big difference. Filters, a simple cleaning and recharge of the refrigerant can keep things humming along efficiently and can protect the life of your equipment.

Additional recommended energy efficiency or money-saving tips

- You may be eligible to receive up to $3,200 annually in federal tax credits for making qualifying energy efficiency upgrades to your home. Visit energystar.gov/about/federal_tax_credits and contact your tax professional for additional detail.

[redacted]
Little Rock, AR 72209

Low income solutions program

ENERGY-SAVING PRODUCTS

Advanced Power Strips
Number provided today: 2
Estimated annual savings: $40.34
Estimated lifetime savings: $403.40

Faucet aerator
Number provided today: 0
Estimated annual savings: $0.00
Estimated lifetime savings: $0.00

Efficient-flow showerheads
Number provided today: 0
Estimated annual savings: $0.00
Estimated lifetime savings: $0.00

Smart thermostat
Number provided today:
Estimated annual savings: $0.00
Estimated lifetime savings: $0.00

ENERGY-SAVING SERVICES

Air sealing
Your home received air sealing. A well-sealed home reduces the amount of air that leaks in and out of your home. Air sealing is a cost-effective way to cut heating and cooling costs, improving durability, increasing comfort and creating a healthier indoor environment.

Duct sealing
Your home received duct sealing. A duct system that is well-designed and properly sealed can make your home more energy efficient, safer, and more comfortable.

Ceiling insulation
Your home received ceiling insulation. Ensuring you have proper ceiling insulation levels can increase your home's comfort, decrease your energy usage year-round and lower the demand on your A/C unit.

Home energy assessment
A survey was performed to identify ways to improve your home's energy efficiency. Please see page three of this report for energy-saving solutions specific to your property.

EXPLORE MORE SAVINGS

Energy Solutions offers a variety of other energy efficiency programs and services designed to help you improve energy efficiency, benefit your home, and save you money.

Air Conditioning tune-up
Air conditioning tune-ups help each home's system to run more efficiently and can provide more comfort to residents while lowering energy costs. Visit **entergyarkansasfy.com** to find an authorized trade ally.

Smart Direct Load Control Program
Save smart with a free smart thermostat professionally installed and earn an annual cash incentive. Visit **entergyarkansas.com/thermostat** for more details.

Point of Purchase Solutions
Whether you're shopping at the corner store or online, using the Entergy Arkansas Marketplace, there's a discount or rebate to help you save. Visit **energysolutionsar.marketplace.com** for more information.

Also have natural gas at your home? Arkansas gas utilities may offer energy efficiency programs. Visit **summitutilities.com** or **blackhillsenergy.com** for more information.



[redacted]
Little Rock, AR 72209

Low income solutions program

TERMS AND CONDITIONS

SIGNATURES

Please be sure you have read the terms and conditions of this application.

I HAVE READ AND UNDERSTAND THE TERMS AND CONDITIONS ABOVE. I CERTIFY THAT THE INFORMATION I HAVE PROVIDED IS TRUE AND CORRECT.

[redacted]

CUSTOMER DIRECT INSTALL VERIFICATION

One or more energy saving items was left by the contractor for you to install. The item(s) was left by me to install as a result of:

Customer Initials: [redacted]

ARSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5 Point of Purchase Solutions

3.5.1 EAL Newsletter February 2024 POPS- Appliance Recycling



Insights > It pays to recycle your old refrigerator or freezer

It pays to recycle your old refrigerator or freezer

BY ARKANSAS EDITORIAL TEAM

02/05/2024

Need a convenient way to recycle an old fridge or freezer? Entergy Arkansas makes appliance recycling a breeze. Simply schedule an appointment and we'll pick up your old refrigerator and recycle it at no cost. Not only will you be doing your part to keep appliances out of the landfill, you'll also receive a $25 rebate.*

An older refrigerator uses about 35% more energy than newer, more efficient models. According to ENERGY STAR®, an efficient refrigerator could save you up to $260 per year on your energy bill! Plus, Entergy Arkansas offers additional rebates when you purchase an ENERGY STAR® certified compact, chest or upright freezer.

Did you know the average older refrigerator contains more than 120 pounds of recyclable steel? Our technicians can recycle up to 95% of the materials, turning things like plastic, metals and glass into new appliances. Your old fridge or freezer may also contain refrigerants, oils, mercury and other toxic compounds that are harmful if not properly removed and recovered.

Customers should have the following information ready to schedule an appointment:

- Entergy Arkansas residential account number
- Name on account and physical address
- Appliance information (appliance type, brand and model, cubic feet, estimate age/year)
- Email address and phone number

Email EntergyARrecycling@eclareselt.com or call 833-748-7329 to schedule your pickup.

*Must be a residential customer. Appliance must be in working condition.

3.5.2 2024 POPS Smart Thermostat Rebate Form

ARSCC FILED Time: 5/1/2025 11:47:51 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Smart thermostat rebate application

Account information

Entergy Arkansas account number (of installation address):

☐☐☐☐☐☐☐☐☐☐☐☐

Installation address: _____ City: _____ State: _____ ZIP code: _____

Purchaser's name: _____ Daytime phone: _____

Product and home information

Does your home have central A/C and Wi-Fi? (required) ☐ Yes ☐ No

Thermostat make and model #: _____

How do you primarily heat your home? (check one) ☐ Electric ☐ Natural Gas ☐ Propane ☐ Other: _____

What type of home do you live in? ☐ Single family ☐ Duplex/Triplex ☐ Multifamily

What is the square footage of your home? ☐ 0–1,500 ☐ 1,501–2,500 ☐ 2,500+

What kind of thermostat are you replacing? ☐ Manual ☐ Programmable ☐ Unknown

By signing below, the purchaser authorizes Entergy Arkansas to perform a phone survey or physical inspection to confirm installation.
Rebate checks will be paid to purchaser listed on this form.

Signature: _____

Please send this application, along with a copy of your dated sales receipt, to:

Entergy Arkansas Rebate Program
16350 Felton Road, Lansing, MI 48906

Email:
entergyarappliances@clearesult.com

Or apply online at
entergyarappliances.clearesult.com

This offer is available to Entergy Arkansas residential customers through Dec. 31, 2024, and only applies to ENERGY STAR certified smart thermostats installed in homes with central A/C and Wi-Fi. Limit one rebate per household. Cannot be used in combination with any other Entergy offer. All rebate forms must be received within 90 days of purchase, and purchases must have been made between Jan. 1, 2024, and Dec. 31, 2024. Please allow six to six weeks for processing. For more information about other energy efficiency incentives from Entergy Arkansas, visit entergyarkansas.com/energy_efficiency or call 877-372-2420.

entergy

3.5.3 2024 POPS Freezer Rebate Form

ARKANSAS PUBLIC SERVICE COMMISSION 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

Entergy Solutions
BY ENTERGY ARKANSAS

Up to $50 rebate

on a new qualifying ENERGY STAR® certified freezer



Step 1:
Purchase a new ENERGY STAR certified compact, chest or upright freezer.

Step 2:
Complete and sign the form on the back of this card, then mail or email the form with a dated receipt to the address provided within 60 days.

Step 3:
If all requirements are met, we will issue a $25 rebate for a freezer up to 7.75 cubic feet in capacity or a $50 rebate for a freezer above 7.75 cubic feet in capacity.

Save up to $195 in energy costs over the next five years when you replace your old freezer with a new ENERGY STAR certified model.

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Freezer rebate application

Account information

Entergy Arkansas account number (of installation address):

☐☐☐☐☐☐☐☐☐☐☐☐

Installation address: _____ City: _____ State: _____ ZIP code: _____

Purchaser's name: _____ Daytime phone: _____

Product and home information

Freezer capacity (in cubic feet): _____

Freezer model #: _____

Type of freezer (check one): ☐ Compact ☐ Chest ☐ Upright

Water in your home is supplied by (check one): ☐ Municipal water source ☐ Well ☐ Other: _____

Does your home tie into a municipal sewer system? (check one): ☐ Yes ☐ No

By signing below, the purchaser authorizes Entergy Arkansas to perform a phone survey or physical inspection to confirm installation. Rebate checks will be paid to purchaser listed on this form.

Signature: _____

Please send this application, along with a copy of your dated sales receipt, to:

Entergy Arkansas Rebate Program
16350 Felton Road, Lansing, MI 48906

Email:
entergyarappliances@clearesult.com

Or apply online at
entergyarappliances.clearesult.com

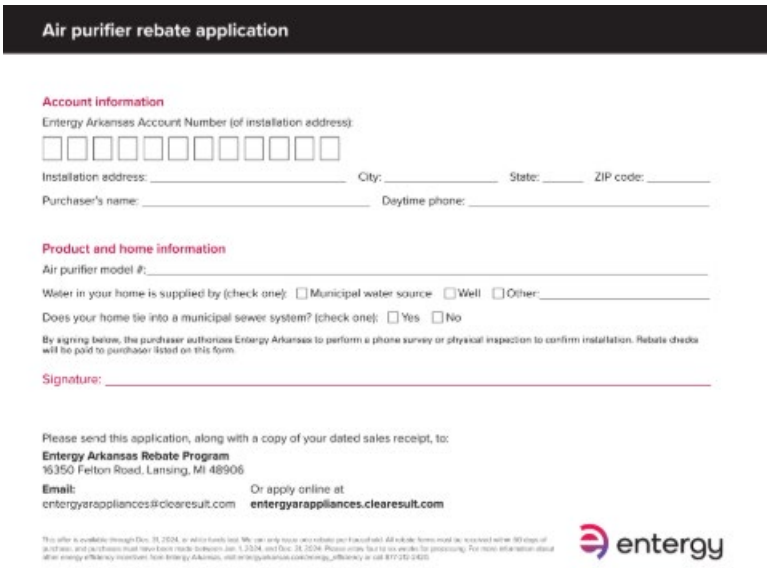
This offer is available through Dec. 31, 2024, or while funds last. We can only issue one rebate per household. All rebate forms must be received within 60 days of purchase, and purchases must have been made between Jan. 1, 2024, and Dec. 31, 2024. Please allow four to six weeks for processing. For more information about other energy efficiency incentives from Entergy Arkansas, visit entergyarkansas.com/energy_efficiency or call 877-212-2420.

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3.5.4 2024 POPS Air Purifier Rebate Form





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3.5.5 2024 POPS Dehumidifier Rebate Form

Entergy Solutions
BY ENTERGY ARKANSAS

$25 rebate

on a new qualifying ENERGY STAR® certified dehumidifier



Step 1:
Purchase a new ENERGY STAR certified dehumidifier.

Step 2:
Complete and sign the form on the back of this card, then mail or email the form with a dated receipt to the address provided within 60 days.

Step 3:
If all requirements are met, we'll issue your rebate. See the back side of the form for detailed requirements.

An ENERGY STAR certified dehumidifier will remove the same amount of moisture from your home as a standard unit while using around 13% less energy.

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Dehumidifier rebate application

Account information

Entergy Arkansas Account Number (of installation address):

☐☐☐☐☐☐☐☐☐☐☐☐

Installation address: _____ City: _____ State: _____ ZIP code: _____

Purchaser's name: _____ Daytime phone: _____

Product and home information

Dehumidifier model #: _____

Water in your home is supplied by (check one): ☐ Municipal water source ☐ Well ☐ Other: _____

Does your home tie into a municipal sewer system? (check one): ☐ Yes ☐ No

By signing below, the purchaser authorizes Entergy Arkansas to perform a phone survey or physical inspection to confirm installation. Rebate checks will be paid to purchaser listed on this form.

Signature: _____

Please send this application, along with a copy of your dated sales receipt, to:

Entergy Arkansas Rebate Program
16350 Felton Road, Lansing, MI 48906

Email:
entergyarappliances@clearesult.com

Or apply online at
entergyarappliances.clearesult.com

This offer is available through Dec. 31, 2024, or while funds last. We can only issue one rebate per household. All rebate forms must be received within 60 days of purchase, and purchases must have been made between Jan. 1, 2024, and Dec. 31, 2024. Please allow four to six weeks for processing. For more information about other energy efficiency incentives from Entergy Arkansas, visit entergyarkansas.com/energy_efficiency or call 877.232.2420.

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3.5.6 Residential POPS Program Manual 2024


Entergy Solutions

2024 Program manual
Residential Point of Purchase Solutions

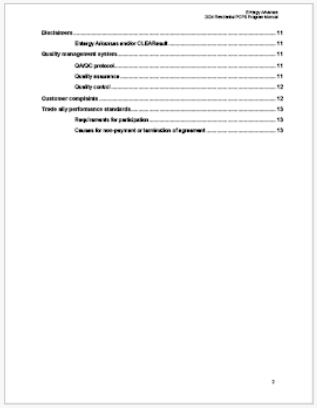
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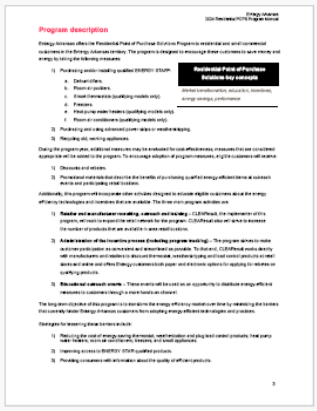
CLEAResult Little Rock
Contact:
877-210-2420
entergyarappliances@clearesult.com
entergyarkansas.com/homeappliances

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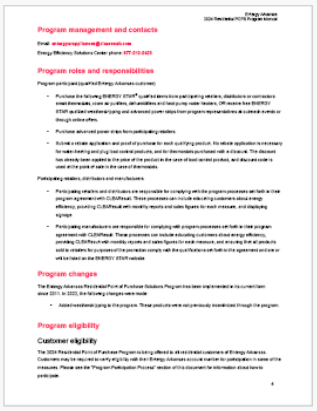

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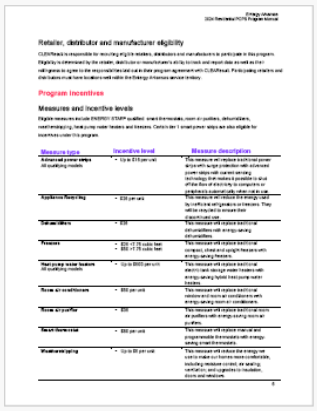
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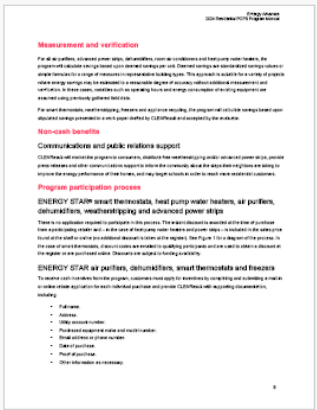
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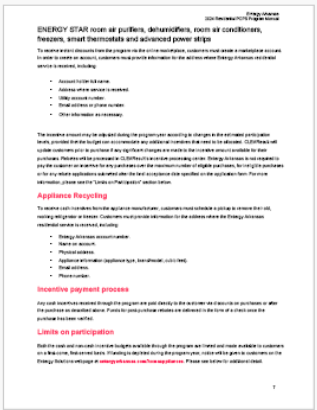
Communications and public relations support

Program participation process

ENERGY STAR® smart thermostats, heat pump water heaters, air purifiers, dehumidifiers, weatherstripping and advanced power strips

ENERGY STAR® air purifiers, dehumidifiers, smart thermostats and freezers

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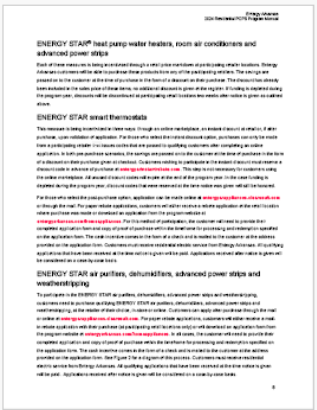

ENERGY STAR room air purifiers, dehumidifiers, room air conditioners, freezers, smart thermostats and advanced power strips

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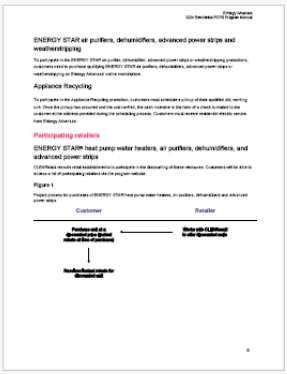

ENERGY STAR® heat pump water heaters, room air conditioners and advanced power strips

ENERGY STAR® smart thermostats

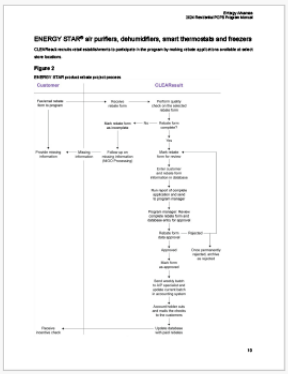
ENERGY STAR® air purifiers, dehumidifiers, advanced power strips and weatherstripping

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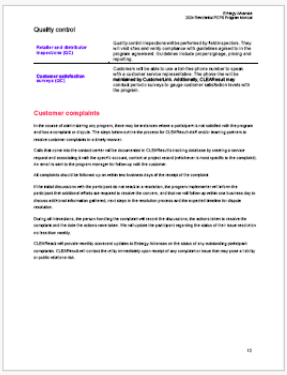
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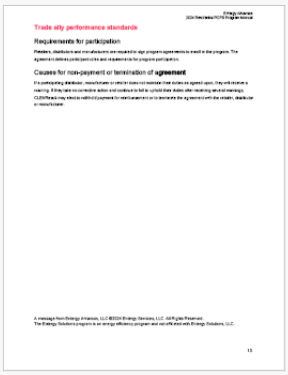
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3.5.7 Commercial POPS Program Manual 2024



2024 Program Manual Commercial Point of Purchase Solutions

Prepared by:

CLEAResult Little Rock
Contact:
877-212-2420
entergyarcommercialdiscounts@clearesult.com
entergyarcommercialdiscounts.com

entergy

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Program description

Entergy Arkansas offers the Commercial Point of Purchase Solutions Program to commercial customers in the Entergy Arkansas territory. The program is designed to encourage these customers to save money and energy by:

- Purchasing and/or installing qualified ENERGY STAR® or DesignLights Consortium listed:
  - LED bulbs.
  - LED fixtures.
- Purchasing and installing qualified variable-frequency drives, small air compressors and hand dryers.

Commercial POPS Program Key Concepts

Market Transformation, Education, Incentives, Steam/ Sawtooth and Convenience

During the program year, additional measures will be evaluated for cost-effectiveness. Measures that are considered appropriate will be added to the program. To encourage adoption of program measures, eligible customers will receive:

- Discounts at the point of sale.
- Promotional materials that describe the benefits of purchasing qualified energy-efficient items at participating distributor locations and other locations.

Additionally, this program will incorporate other activities designed to educate eligible customers about the energy efficiency technologies and incentives that are available. The two main program activities are:

- **Trade ally recruiting, outreach and training** – CLEAResult, the implementer of this program, will work to expand the trade ally network for the program. CLEAResult will also strive to increase the number of products that are available in area distributor locations.
- **Administration of the incentive process (including program tracking)** – The program strives to make participation in programs as convenient and streamlined as possible. To this end, CLEAResult works directly with trade allies to discount products at participating distributor locations and online.

The long-term objective of this program is to transform the energy efficiency market over time by minimizing the barriers that hinder Entergy Arkansas commercial customers from adopting energy-efficient technologies and practices. Strategies for lessening these barriers include:

- Reducing the cost of energy-saving products.
- Improving access to energy-saving products.
- Providing commercial customers with information about the quality of efficient products.

Program management and contacts

- Email: entergyarcommercialdiscounts@clearesult.com
- Energy Efficiency Solutions Center
- Phone: 877-212-2420

Program roles and responsibilities

Program participant (Qualified Entergy Arkansas commercial customer)

- Purchase the following qualifying energy-efficient products from participating trade allies:
  - LED linear bulbs, LED fixtures, VFDs, hand dryers or small air compressors.
- Sign Program Participation Agreement.
- Install all purchased products within 30 days of purchase.
- Make facilities available for inspection if requested.

Participating trade allies

- Participating trade allies are responsible for complying with the program processes set forth in their program agreement with CLEAResult. Process can include educating customers about energy efficiency, providing CLEAResult with monthly reports and invoices for each measure, and displaying signage.

Program eligibility

Customer eligibility

The 2024 Commercial Point of Purchase Program is being offered to all commercial customers of Entergy Arkansas who have not opted out of energy efficiency programs. Customers may be required to verify eligibility with their Entergy Arkansas account number for participation in the program. Please see the Program Participation Process section of this document for information about how to participate.

Trade ally eligibility

CLEAResult is responsible for recruiting eligible trade allies to participate in this program. Eligibility is determined by the trade ally's ability to track and report data, as well as their willingness to agree to the responsibilities laid out in their program agreement with CLEAResult. Participating distributors must have service territory or locations within the Entergy Arkansas service territory, must have a minimum amount of physical inventory available for inspection, and must be in good standing if participating in other Entergy Arkansas energy efficiency programs.

Program incentives

Measures and incentive levels

Eligible lighting measures include DLC qualified linear light bulbs and LED light fixtures, as well as ENERGY STAR qualified LED light bulbs through June 30, 2024. These measures will replace incandescent and halogen bulbs and fixtures with energy-saving LED fixtures.

Measure type	Incentive level (as of 1/1/24)
LED downlight trim kit (280-4,599 lumens)	$5 per unit
LED T8 replacement lamp, 2 ft. (600-2,600 lumens)	$2 per bulb
LED T8 replacement lamp, 4 ft. (1,500-3,199 lumens)	$2 per bulb
LED T8 replacement lamp, 8 ft. (3,100-5,999 lumens)	$5 per bulb
LED T5 replacement lamp (3,000-6,000 lumens)	$3 per bulb
LED troffer/linear ambient retrofit kit or surface mounted fixture (1,500-3,499 lumens)	$10 per fixture
LED troffer/linear ambient retrofit kit or surface mounted fixture (3,500-5,999 lumens)	$20 per fixture
LED troffer/linear ambient retrofit kit or surface mounted fixture (6,000-10,000 lumens)	$25 per fixture
LED fixture (3,000-7,499 lumens)	$35 per fixture
LED fixture (7,500-11,999 lumens)	$45 per fixture
LED fixture (12,000-24,999 lumens)	$55 per fixture
LED fixture (25,000-80,000 lumens)	$75 per fixture
LED exterior Fixture* (1,000-4,999 lumens)	$20 per fixture
LED exterior fixture* (5,000-8,999 lumens)	$35 per fixture
LED exterior fixture* (9,000-19,999 lumens)	$65 per fixture
LED exterior fixture* (20,000-54,999 lumens)	$115 per fixture
LED garage fixture (2,000-5,499 lumens)	$20 per fixture
LED garage fixture (5,500-7,499 lumens)	$75 per fixture
LED garage fixture (7,500-12,000 lumens)	$95 per fixture

*LED [illegible] includes DLC-approved [illegible] luminaires, Retrofit Kits, and **HID Replacement Lamps
LED Troffer includes DLC-approved Troffer luminaires, Integrated Retrofit Kits, and Downlight retrofit kits
LED Exterior* includes the following DLC-approved outdoor luminaires, retrofit kits and **HID replacement lamps (approved for these applications)

- Outdoor Retrofit Mounted Area and Roadway Luminaires
- Outdoor Retrofit Mounted Decorative Luminaires
- Outdoor Pole/Wall Mounted Area Luminaires
- Outdoor Non-Cutoff and Semi-Cutoff Wall Mounted Area Luminaires
- Post Top Canopy Luminaires
- Landscape Flood and Spot Luminaires
- **HID Lamps = Illegal Exempt Base Replacements for HID lamps Primary Use Products
- Eligible = Specifically manufactured with an E39 base – UL Type B (removal of existing ballast from circuit and line lamp holder wired with the voltage) – UL Type C (requires existing HID ballast replaced with external LED driver)
- Not Eligible = have other base types and are sold with E39 adapter – E39 bases sold with an adapter to other base types – Customer products been operated using either HID ballast or line voltage/an existing HID ballast any capacity) – Exempt Base Replacements for HID Lamps that have features to enable multiple distribution patterns for a single model

Measure type	Incentive level (1/1/2024-6/30/2024)
4-pin LED (High-wattage CFL replacement) (950-2,500 lumens)	$3 per bulb
ENERGY STAR® PAR38	$8 per bulb
ENERGY STAR BR30	$3 per bulb
ENERGY STAR PAR30	$5 per bulb
ENERGY STAR A Lamps (250-1,499 lumens)	$1 per bulb
ENERGY STAR A Lamps (>1,491 lumens)	$3 per bulb
ENERGY STAR Globe	$3 per bulb
ENERGY STAR Candle/Decorative	$4 per bulb

- Incentives may change at any time due to market or program conditions.

Eligible variable frequency drives (VFDs) are between 0.50 horsepower and do not replace a VFD currently in use. VFDs being used as a supply air fan on stand-alone HVAC systems or as a soft-start only do not qualify for this offer. Qualifying VFDs will receive $35 per horse.

Eligible electric hand dryers use air movement and motion sensors to dry instead of heat. Contact the program for a list of qualifying models. Hand dryers being used in new construction applications or replacing an efficient hand dryer do not qualify for this offer. Qualifying electric hand dryers will receive $100 per unit.

Eligible air compressors are between 0-75 horsepower and are installed in a commercial application. Single air compressor systems of the types listed below are eligible but must not be replacing the same type of system. Qualifying air compressors will receive $80 per horse.

- Load /No Load Controls

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- Variable Displacement with Controls
- Variable Speed Drive

Measurement and verification

For all products, the program will calculate savings based upon pre-approved stipulated savings per unit.

Stipulated savings are standardized savings values that have been calculated based on aggregated data for a category of measures in representative building types. This approach is suitable for a variety of projects where energy savings may be estimated to a reasonable degree of accuracy without additional measurement and verification. In these cases, variables such as operating hours and energy consumption of existing equipment are assumed using previously gathered field or market data.

Non-cash benefits

Communications and public relations support

CLEAResult will provide training for the distributor's sales associates on the program rules and processes, as well as any energy-efficient product information they can use to market the program. CLEAResult will also market the program directly to customers and provide press releases and other communications support to inform the business community about the program. CLEAResult may target conferences and shows to reach more business customers.

Program participation process

Lighting products, small air compressors, hand dryers and drives

There is no application in this process. The instant discount is awarded at the time of purchase from a participating distributor and is included in the quoted sales price. Discounts are subject to funding availability. See Figure 1 for a diagram of the process.

To receive incentives from the program, commercial customers must provide their name and address to confirm eligibility for program funding and may be asked for their account or meter number. Commercial customers must also sign a program participation agreement which is provided to Entergy Arkansas and includes, at minimum, the following information:

- Purchaser's full name
- Name and address of business where installation will take place
- Email address (optional) and phone number
- Signature and date of signature

The incentive amount may be adjusted during the course of the program year according to changes in the estimated savings and participation levels. CLEAResult will update trade allies 30 days prior to the change if any changes are made to the incentive amounts available. Entergy Arkansas is not required to pay the trade ally an incentive for ineligible purchases or for any incentive reimbursement requests submitted after the final acceptance date specified in the program agreement. For more information, please see the Limits on Participation section below.

Incentive payment process

Any cash incentives received through the program are paid directly to the commercial customer via discounts on purchases as described above. Reimbursement funds for incentives applied to eligible purchases are delivered in the form of a check to the trade ally once the purchases have been verified.

Limits on participation

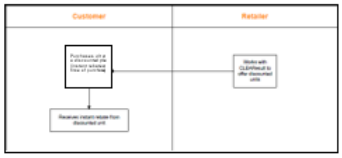
The incentive budget available through the program is limited and made available to commercial customers on a first-come, first-served basis. Funding allocation caps may be put in place with distributors in advance to manage the disbursement of funds.

Participating trade allies

Lighting products, small air compressors, hand dryers and drives

CLEAResult has recruited trade allies to participate in the discount of these measures. Entergy Arkansas commercial customers will be able to access a list of participating trade allies via the Entergy Arkansas website.

Figure 1
Project process for purchases of products



Disclaimers

Entergy Arkansas LLC, and/or CLEAResult

The selection of a participating trade ally or manufacturer's product is the sole decision of the customer. Inclusion of a trade ally or product in the program does not constitute an endorsement by Entergy Arkansas or CLEAResult of any product, individual or company. Neither Entergy Arkansas nor CLEAResult makes any guarantee or any other representation or warranty, expressed or implied or otherwise, as to the quality, cost or effectiveness of any products provided by any such participating trade ally's employees, subcontractors or suppliers.

Energy efficiency gains are subject to a number of variable conditions and circumstances. Within it is the intent of the program to achieve energy efficiencies, neither Entergy Arkansas nor CLEAResult guarantees or warrants that any specific energy efficiency gains will be achieved for a particular customer under the program.

Quality management system

QA/QC protocol

CLEAResult's Quality Management Process (QMP) includes both quality assurance (QA) and quality control (QC) components with a feedback loop to ensure continuous program improvement. It is a holistic and preventative approach to quality assurance. QC inspections are used to verify quality of the results, and QA activities such as trade ally and product qualification and training help to ensure quality issues do not appear downstream in the process. QMP prevents quality issues from coming up and improves the entire system, including for participating distributors.

Customer complaints

In the course of administering any program, there may be instances where a participant is not satisfied with the program and has a complaint or dispute. The below steps outline the process for CLEAResult staff and/or training partners to resolve customer complaints in a timely manner.

Calls that come into the program contact center will be documented in CLEAResult's tracking database. An email is sent to the program team for follow-up with the customer.

All complaints should be acknowledged within two business days of the receipt of the complaint.

If the initial discussions with the participant do not result in a resolution, the program implementer will inform the participant that additional efforts are required to resolve the concern, and that we will follow up within one business day to discuss additional information gathered, next steps in the resolution process and the expected timeline for dispute resolution.

During all interactions, the person handling the complaint will record the discussions, the actions taken to resolve the complaint and the date the actions were taken. We will update the participant regarding the status of their issue resolution no less than weekly.

CLEAResult will provide monthly updates to Entergy on the status of any outstanding participant complaints. CLEAResult will contact the utility immediately upon receipt of any complaint or issue that may pose a liability or public relations risk.

Distributor performance standards

Requirements for participation

Distributors are required to sign program agreements to enroll in the program. The agreement defines participant roles and requirements for program participation.

Causes for non-payment or termination of agreement

If a participating distributor does not maintain their duties as agreed upon, they will receive a written warning. If they take no corrective action and continue to fail to uphold their duties after receiving several warnings, CLEAResult may elect to withhold payment for reimbursement or to terminate the agreement with the distributor.

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3.5.8 2024 POPS Participation Agreement Commercial

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Entergy Solutions

Commercial Point of Purchase Solutions Program Participation Agreement

Save real money with high efficiency equipment.

The Entergy Arkansas Commercial Point of Purchase Solutions Program offers incentives at the time of purchase for specific high efficiency equipment. Entergy Arkansas commercial customers can obtain the products through their standard purchasing methods while the equipment supplier processes the incentives – also known as the midstream process.

Benefits:

- **Savings, now and later.** Equipment upgrades typically pay for themselves in energy savings alone within a few years, and you can also save immediately through incentives for purchasing select high efficiency products.
- **Simplified process.** The incentives are processed through your equipment supplier, so you get immediate benefits while the supplier handles the paperwork.
- **Convenience.** Entergy Arkansas commercial customers can obtain discounted high efficiency products through standard purchasing methods.

Frequently asked questions

1. **Are there any commercial customers that aren't eligible for participation in the program?**
   Any non-residential Entergy Arkansas customer is eligible to receive discounts through the program, even if you've completed a commercial project for which you received Entergy Arkansas incentives. You cannot receive incentives for the same products twice, but the same facility can participate in both programs.
2. **Do all efficient products qualify for discounts through the program?**
   No, only certain categories of lighting and variable frequency drives of a certain size are eligible for discounts through the program.

How to participate:

1. Sign the back of this form and submit it to your product supplier, which enrolls you in the program and authorizes us to process the incentives for your purchase.
2. Purchase qualified products from your supplier. The incentive amount will be automatically deducted from the purchase price.
3. Install your product within 30 days of the purchase date. One of our program representatives may contact you to verify installation.
4. Enjoy the benefits of your completed project.

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Commercial Point of Purchase Solutions Program

End Customer Participation Agreement

Entergy Arkansas has contracted with CLEAResult to implement, promote and administer the Commercial Point of Purchase Solutions Program (herein referred to as "program") _____, (herein referred to as "participant") recognizes it is a willing participant of this program and is an Entergy Arkansas commercial customer. This participation agreement reflects the voluntary collaboration between your organization and the Entergy Arkansas-sponsored Commercial Point of Purchase Solutions Program. The terms below list the general commitments of the participant in order to improve the energy efficiency of your organization.

To participate in this program, you will need to understand and agree to these terms:

1. The program will provide incentive funds (in the form of a direct discount from the participating supplier) for eligible energy-saving products to be installed by the participant within facilities served by Entergy Arkansas. Installation address must be provided.
2. Participant will promptly install all energy-saving products purchased for their facilities within 30 days of the purchase date of the energy-saving products.
3. Participant will allow necessary post-inspections to be administered by the program for verification of installation of the energy-saving products and arrange for any necessary inspection/participant surveys to be administered by the program evaluator of record.
4. Participant acknowledges that, as part of its participation in this program, it will maintain eligibility to receive program services and incentives for a period of two years from the date the participant receives the discount for the purchase of energy-saving products installed at its organization.

Disclaimer: The purchasing of eligible energy-saving products from a participating supplier is the sole decision of the participant. The inclusion of a participating supplier for the program does not constitute an endorsement by Entergy Arkansas or CLEAResult of any product, individual or company. Eligible energy-saving products purchased by the participant from a participating supplier are not guaranteed or subject to any representation or warranty, either expressed or implied or otherwise, by either Entergy Arkansas or CLEAResult. Neither Entergy Arkansas nor CLEAResult makes any guarantee or any other representation or warranty expressed or implied or otherwise, as to the quality, cost or effectiveness of any energy-saving product(s) provided by any participating supplier, by any such participating supplier's employees or subcontractors. Energy-efficiency gains are subject to a number of variable conditions and circumstances. While it is the intent of the program to achieve energy efficiencies at the participant's organization, neither Entergy Arkansas nor CLEAResult guarantees or warrants that any specific energy-efficiency gains will be achieved for a particular customer under the program.

End customer acknowledgment

I acknowledge that, by signing below, I understand and agree to the terms listed above. I understand that I will be liable to pay back the participating supplier some (or all) of the discounted amount received for the products purchased if I decide not to proceed with the installation of all purchased products. I agree to allow my account information and data to be used by the program staff for the purposes of verifying program eligibility and reporting program data to Entergy Arkansas. I acknowledge that I have read and understand the above disclaimer.

By endorsing below, your organization accepts this agreement with Entergy Arkansas. If your organization wishes to end its participation in the program, it may do so at any time by providing the program administrator written notice of its intentions, subject to product installation status and incentives received as outlined above.

End customer point of contact (first and last name): _____

End customer company name: _____

Installation location address, city, state, ZIP: _____

Telephone: _____ Email: _____

SIGNATURE: _____ **DATE:** _____

Please fill in completely, sign and hand this form to your product supplier.

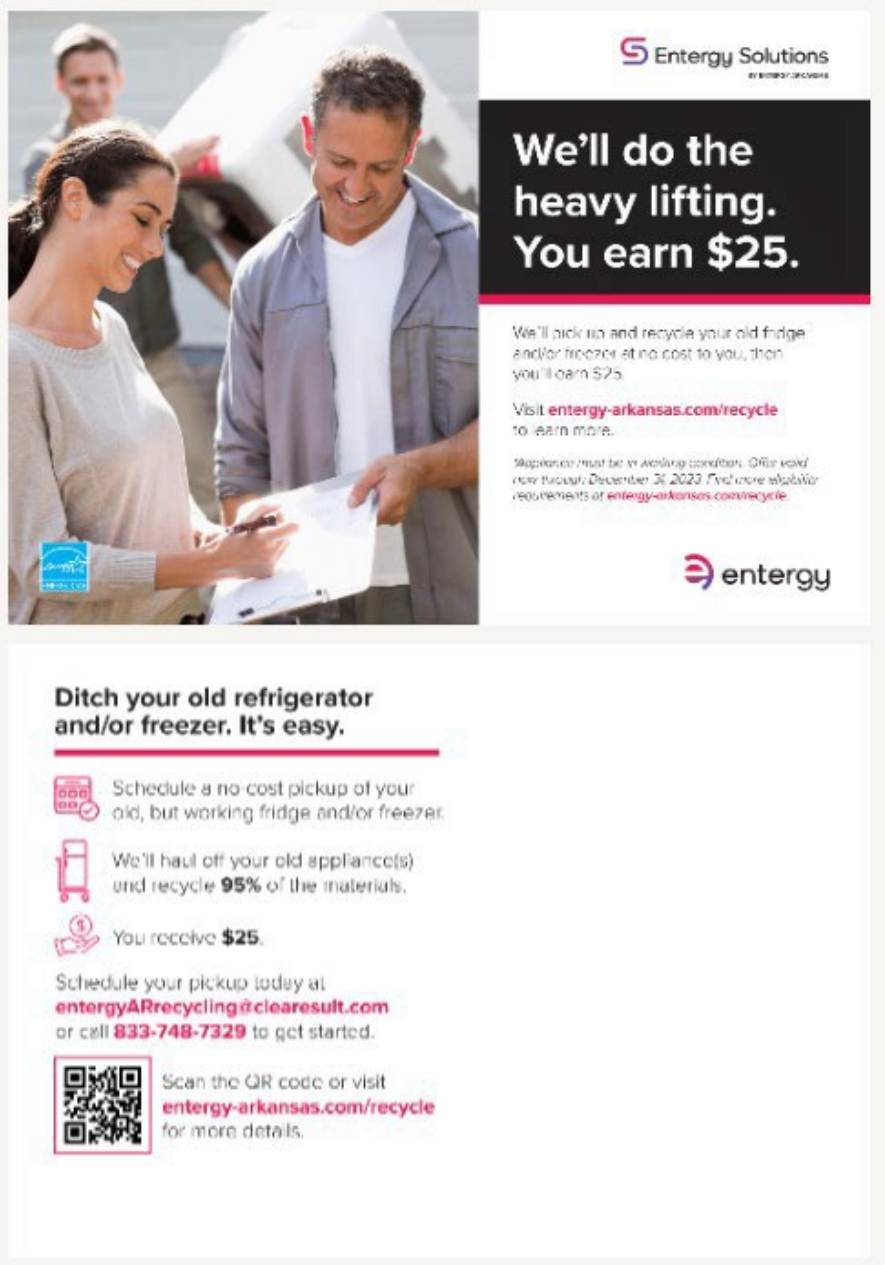
Questions?
Contact the Energy Efficiency Solutions Center
at **877-212-2420** or visit **entergyarkansas.com/commercial-midstream.**

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APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.9 POPS Recycling Direct Mail 2023



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.10 POPS Weatherization Kit Flyer 2024

Entergy Solutions



A gift that saves you energy

Your Weatherization Kit is a quick and easy way to save money and use less energy. It only takes a few minutes to install these simple savers that improve your efficiency every day.

Want more?

Entergy Arkansas offers convenient ways to save on all kinds of energy-efficient products for your home.

For a full list of eligible products, visit **entergyarkansas.com/homeappliances**.

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What's in your kit?

Weatherstripping and door sweep

Did you know that weatherstripping and door sweep do more than reduce drafts and energy use? Additionally, they can reduce noise and improve indoor air quality.

Learn about more ways to save by visiting **entergyarkansas.com**.

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3.5.11 POPS 2024 Appliance Recycling Program Emal

Entergy Solutions
BY ENTERGY ARKANSAS



Let us do the heavy lifting

Have an old refrigerator or freezer to recycle? Don't sweat it: Entergy Arkansas has you covered. We'll pick up your old fridge or freezer at no cost—plus give you a **$25 rebate.***

Schedule now

Responsible recycling

When you schedule a pickup for your old refrigerator or freezer, you'll be preventing more than 120 pounds of recyclable steel from going into a landfill. Your old fridge or freezer may also contain refrigerants, oils, mercury and other toxic compounds that are harmful if not properly removed and recovered. Our expert technicians will recycle up to 95% of the old materials, and you'll receive a **$25 rebate** for responsibly recycling.

Request pickup

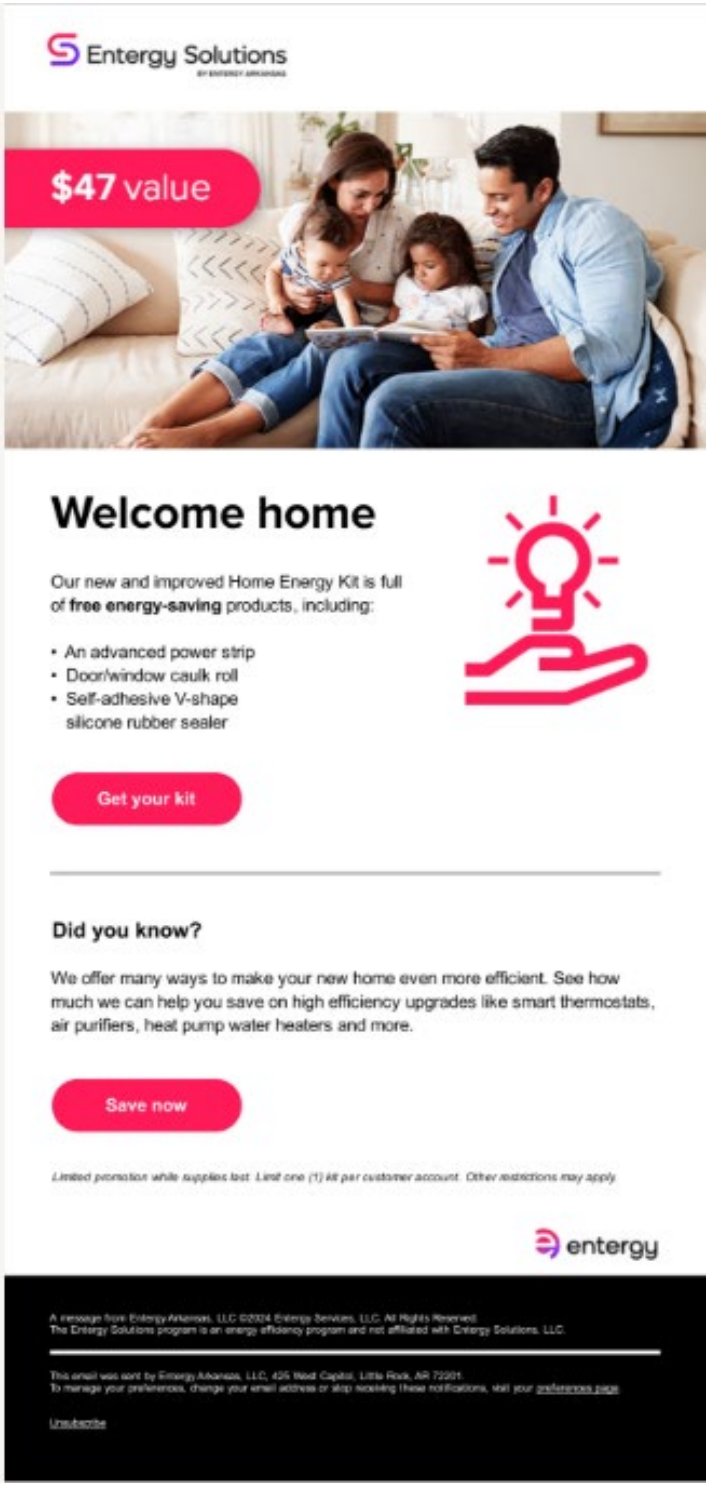
Or contact us at:
entergyarrecycling@clearesult.com
1-833-748-7329

Appliance must be in working condition. Rebate is valid for residential customers only and will be provided via incentive check. Offer valid now through **December 31, 2024. Find more eligibility requirements at entergy-arkansas.com/recycle.*

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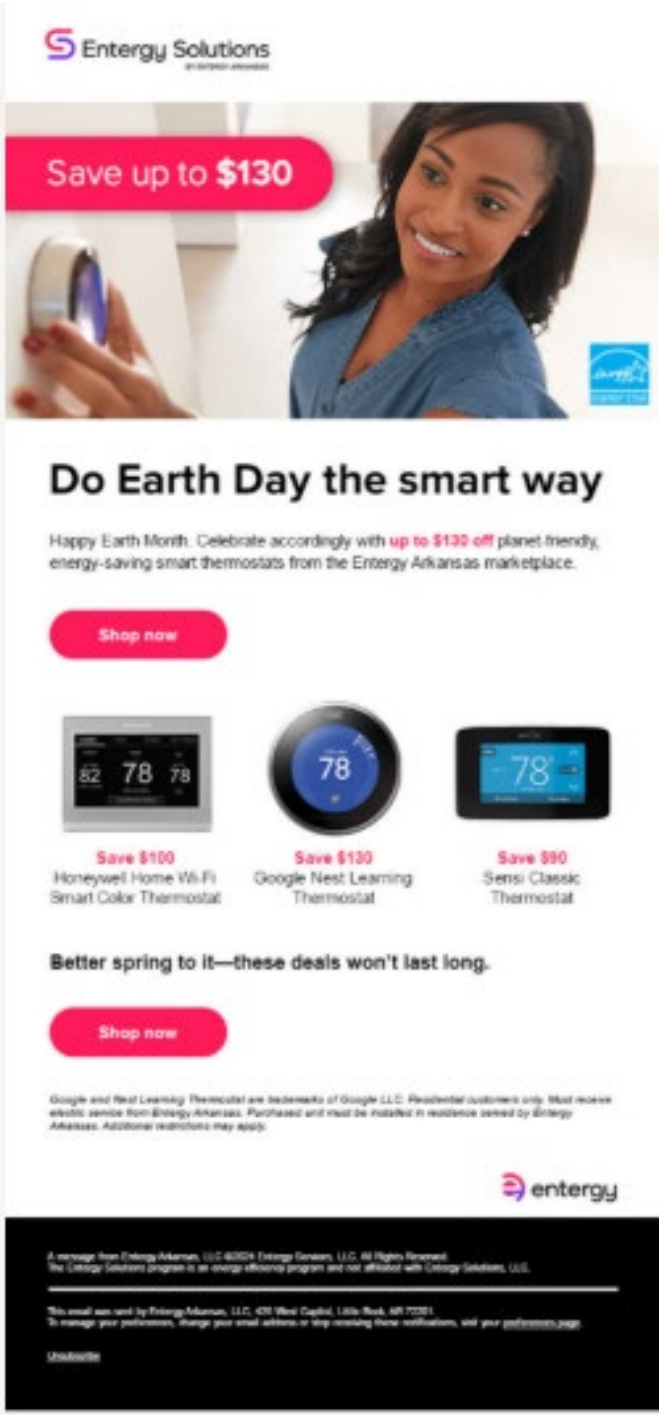
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.12 ome Energy Kit Email POPS 2024



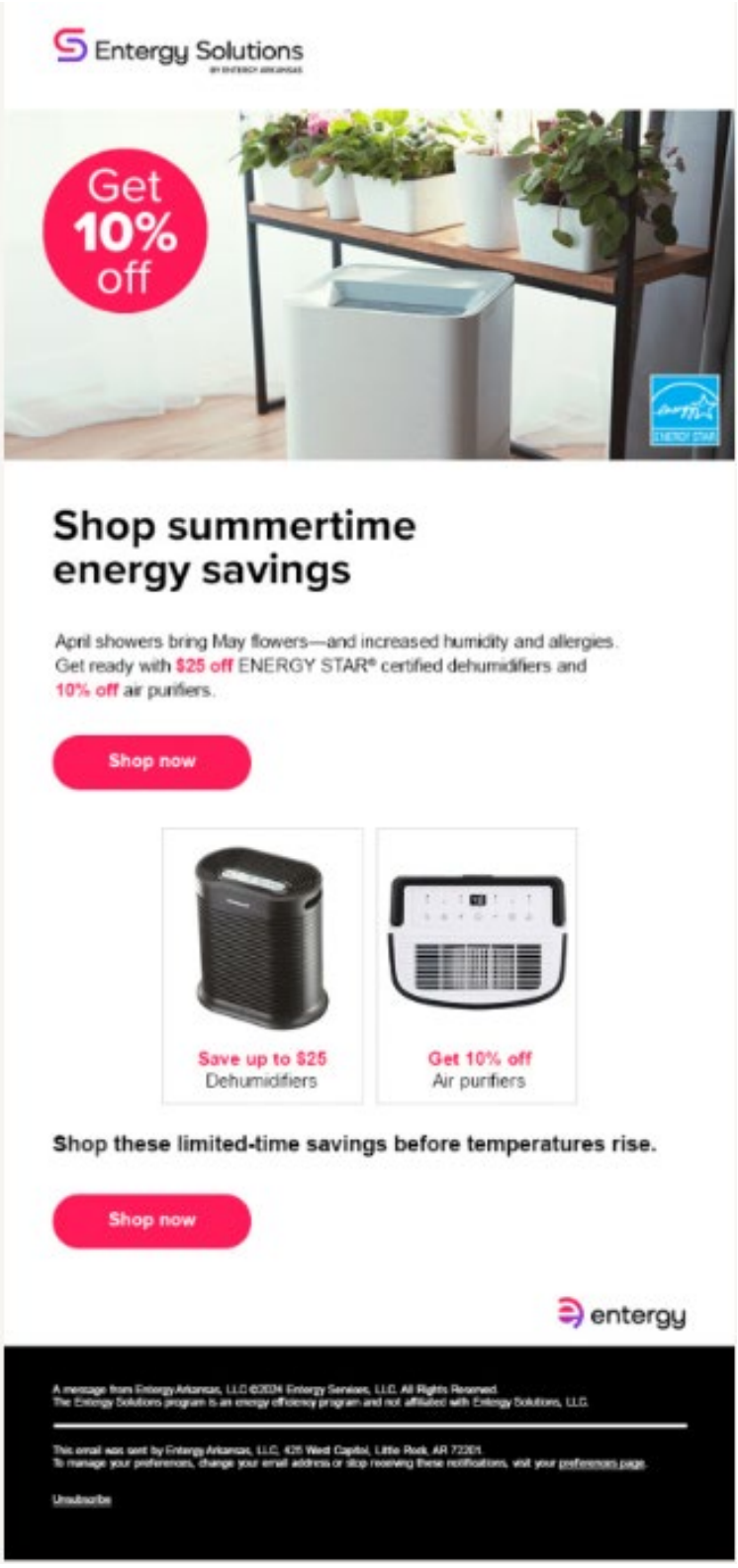
3.5.13 POPS EAL Marketplace Earth Day Email April 2024

ARSCC Filed Date: 5/1/2025 12:55:28 AM Revd: 5/1/2025 12:47:21 AM Docket 07-085-TF-Doc. 862



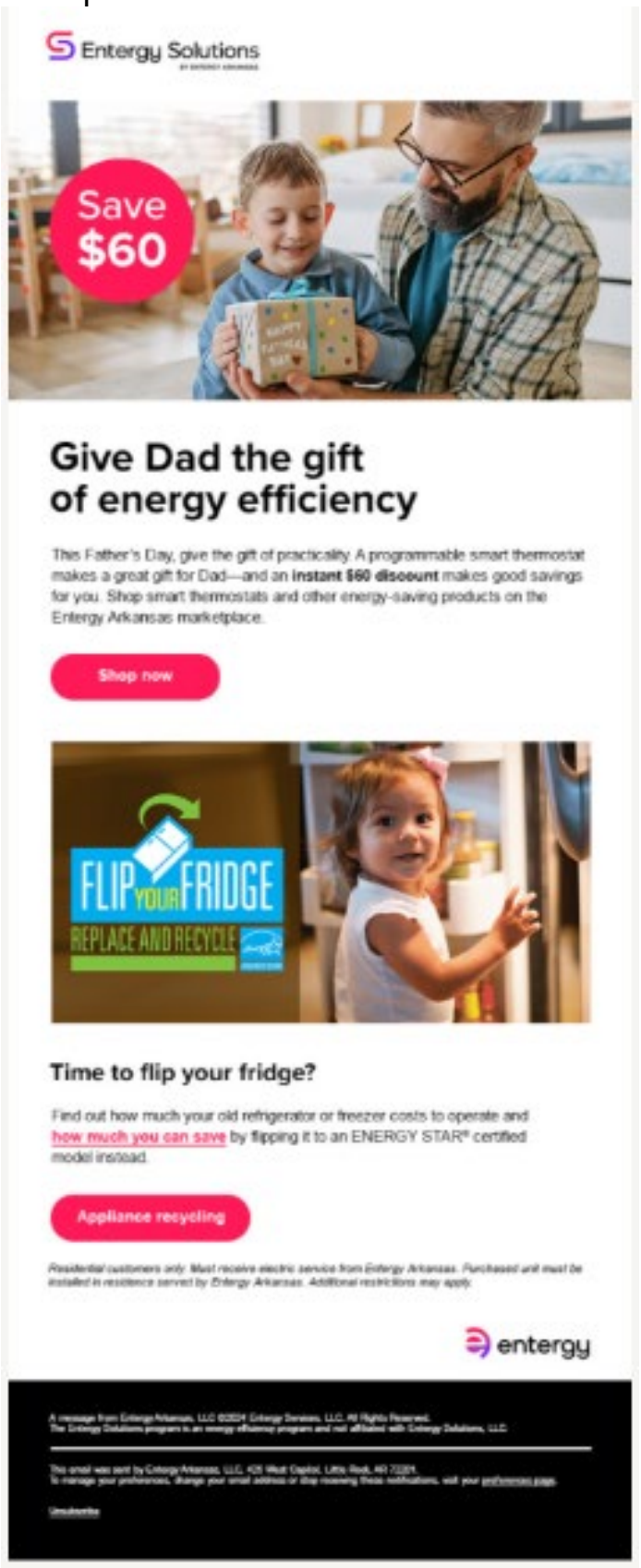
3.5.14 POPS May 2024 Marketplace Promo Email Air Purifiers

ARSC Docket 24-002625-RC (24) AM Exhibit 5/4/2024 11:47:52 AM: Docket 07-085-TF-Doc. 862



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.15 POPS June 2024 Marketplace Promo Email



3.5.16 POPS July 2024 Marketplace Promo Email

ARSCFILED Time: 5/1/2025 11:47:28 AM: Received 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



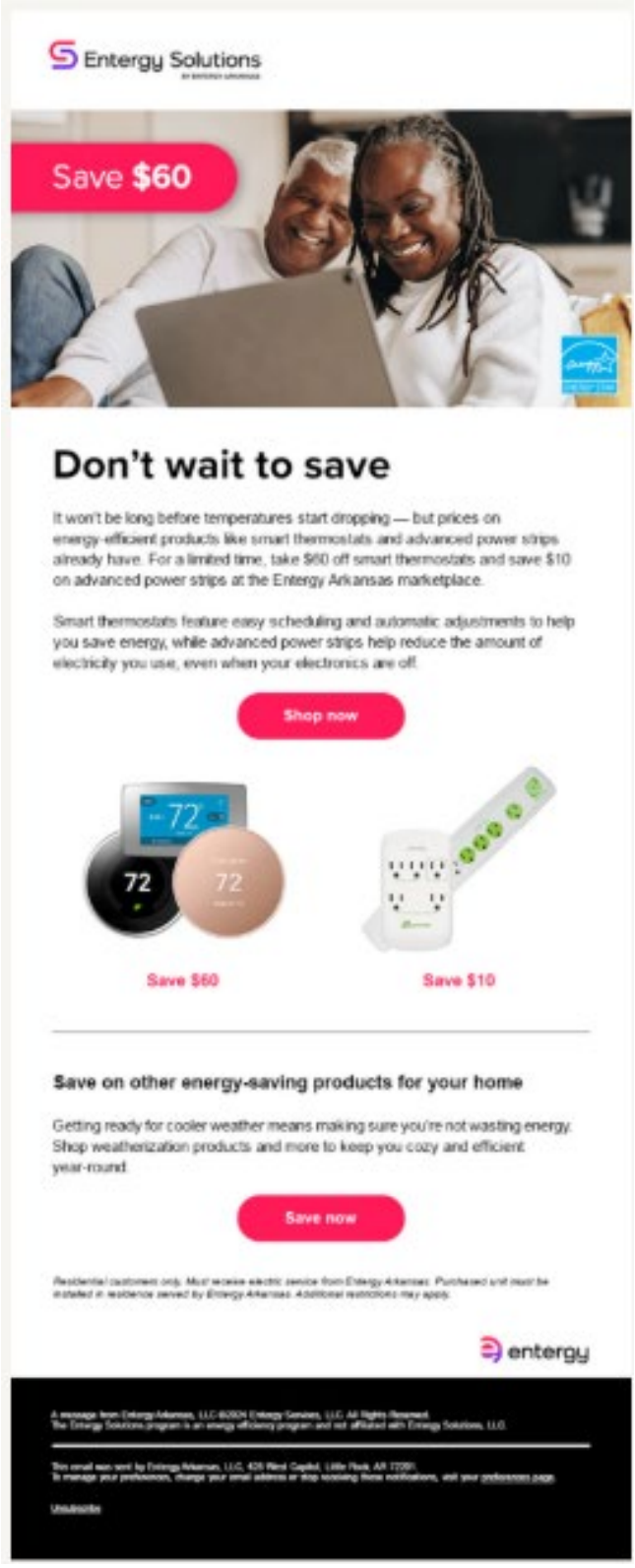
3.5.17 POPS Marketplace August 2024 Promo Email

2025 5:45:26 AM Received: 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



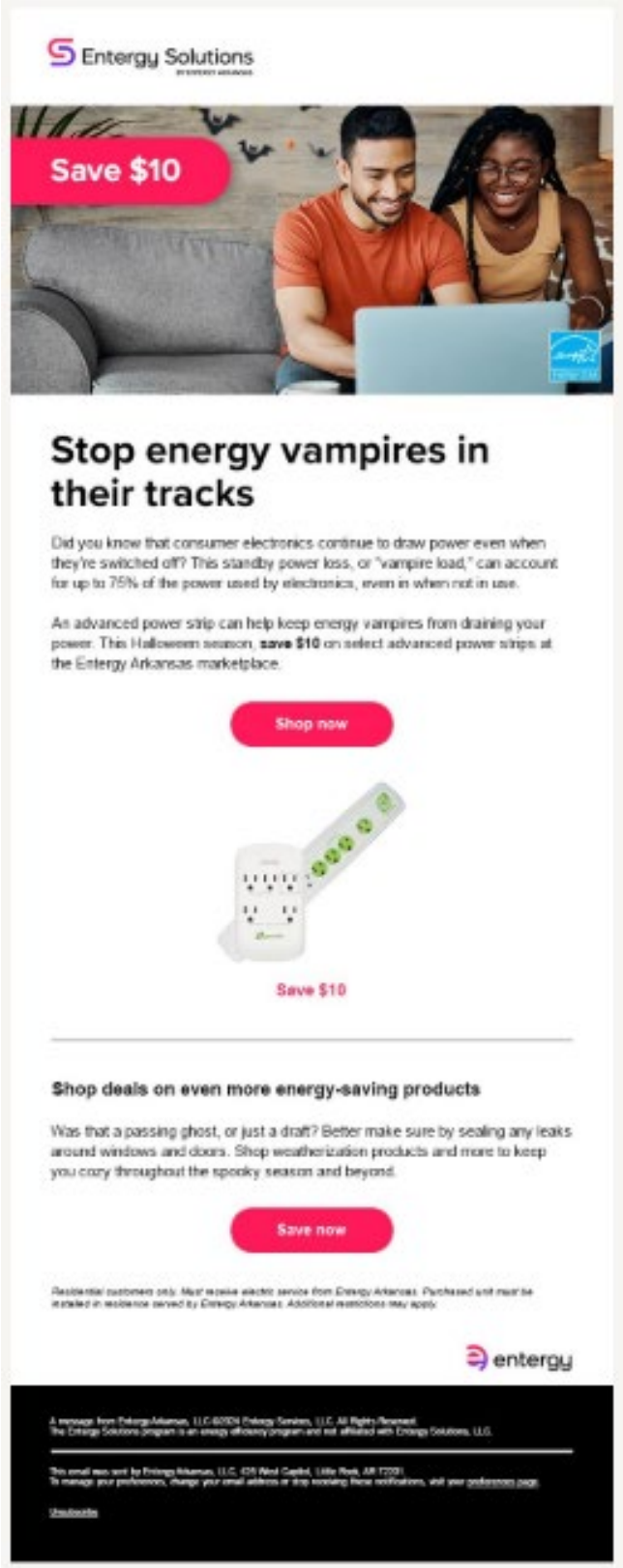
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.17 OPS September 2024 Marketplace Promotional Email



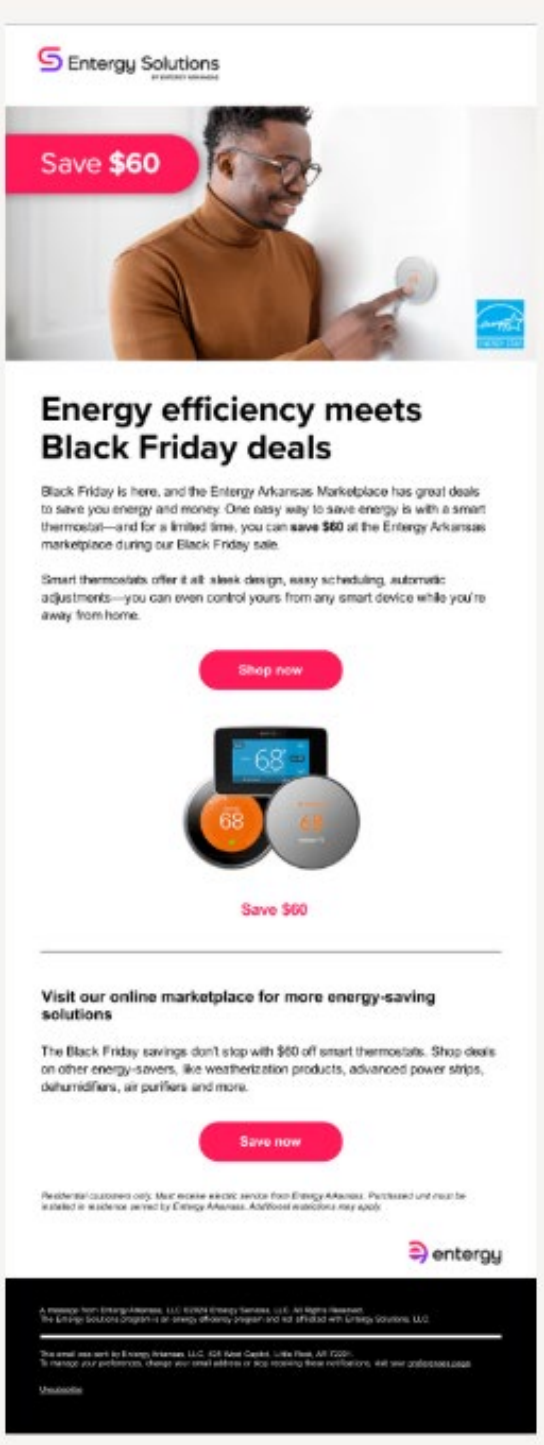
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.19 POPS October 2024 Marketplace Promotional Email



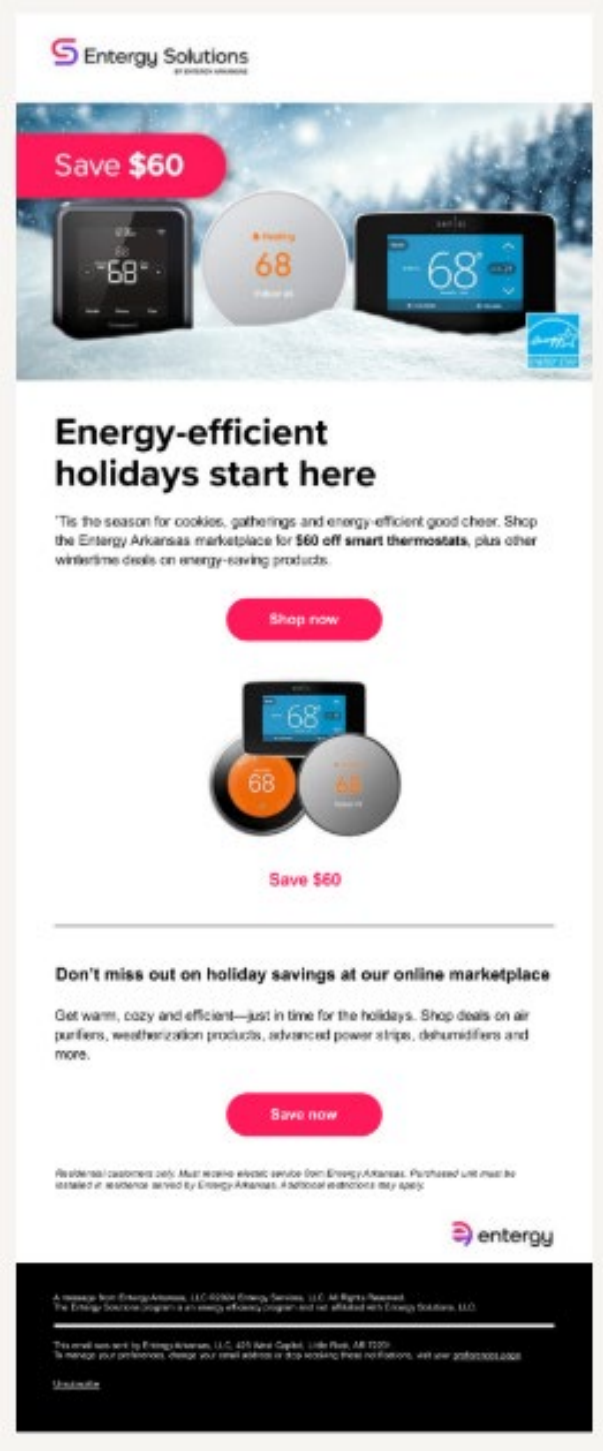
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.20 POPS November 2024 Black Friday Promotional Marketplace Email



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.21 POPS December 2024 Promotional Marketplace Email



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.22 RES POPS Overview FLYER Clean 2024

Entergy Solutions



Residential Point of Purchase Solutions Program

Entergy Arkansas offers four convenient ways to save on energy-efficient upgrades for your home.

Online marketplace	**The online marketplace is the easiest way to save. Find instant rebates, special offers and more on a wide range of energy-saving products.**
	Free shipping on orders over $35 Available products include weatherstripping, caulk and advanced power strips, as well as ENERGY STAR® certified smart thermostats, dehumidifiers and air purifiers. Shop now at **entergyarkansas.com/marketplace**.
Instant discounts	**Shop and save instantly at participating stores (list available online).**
	Advanced power strips: up to $15 Unused devices can still consume energy. Use an advanced power strip to prevent this costly "vampire power."
	Window air conditioners: $50 off ENERGY STAR Most Efficient models The latest air conditioners on the market offer more than just added energy savings; many come with connected functionality, offering more convenience and comfort.
	Heat pump water heaters: up to $500 off select models Replacing a traditional electric storage water heater with a hybrid unit provides more control and insight into usage, as well as big energy savings.
Discount codes	**Get your instant discount code from our online portal; then redeem at checkout.**
	Smart thermostats: $60 Many smart thermostats can adapt to your schedule and preferences, track your energy use and be adjusted remotely through your smartphone.
Rebates	**Purchase a qualifying ENERGY STAR certified product; then apply for a rebate online or by mail. Rebates are also available for smart thermostats.**
	Freezers: up to $50 Claim your Entergy Arkansas rebate now, and you could save $195 over the next five years on your Entergy bill. Additionally, take advantage of our NEW refrigerator and freezer recycling offer including pickup and recycling at no cost, plus a $25 rebate per eligible appliance recycled.
	Room air purifiers: $35 Clear the air and save up to $30 each year in energy costs by upgrading to a more energy-efficient air purifier.
	Dehumidifiers: $25 ENERGY STAR certified dehumidifiers are about 30% more efficient than standard models.

For a full list of eligible products and more ways to save, visit **entergyarkansas.com/homeappliances**.

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3.5.23 Appliance Recycling Flyer 2024- Realtors & Apartments

Entergy Solutions



Upgrade and save with free appliance pickup and recycling

Easy and convenient recycling rebates for your clients

When it's time to upgrade an old fridge or freezer, Entergy Arkansas is here to help your clients responsibly recycle their old appliances.

We'll pick up old refrigerators and freezers at no cost and then recycle 95% of the materials, such as plastic, metal and glass. Plus, your clients will receive a $25 cash incentive for pulling the plug on their outdated, inefficient appliances.

The average household can save up to **$260 per year** on energy bills with more efficient ENERGY STAR® certified appliances. Here are a few signs it might be time to retire an old refrigerator or freezer:

- Accumulation of ice or moisture.
- Cracking or broken seals.
- Excessive heat.
- Constantly running motor.

Learn more

Schedule a pickup

Email **entergyARrecycling@clearesult.com**
or call **833-748-7329**.

Eligibility requirements: Appliance must be a refrigerator or freezer, at least 10 years old and between 10–32 cubic feet. Appliance must be owned by an Entergy Arkansas residential customer and be in working (cooling) order, empty, clean and plugged in at the time of pickup, with water line disconnected. (Please do not cut outlet cord.)

Rebate will be mailed within six weeks of appliance pickup. Limit one (1) refrigerator and one (1) freezer per household within a 1-year period. Miniature and commercially sized refrigerators and freezers do not qualify. Any freezer must be a standalone unit. Entergy Arkansas reserves the right to revise requirements and rebate levels at any time. Rebates are subject to availability. The appliance recycling offer is not a replacement program. While we will collect the old appliance and issue the rebate, customers must purchase their own replacement appliance.

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Entergy Solutions



Add value to your property with free appliance pickup and rebates

Easy and convenient recycling rebates for your tenants

When it's time to upgrade an old fridge or freezer, Entergy Arkansas offers a convenient way to help your tenants earn cash back for recycling their old appliances.

We'll pick up old refrigerators and freezers at no cost and then recycle 95% of the materials, such as plastic, metal and glass. Plus, we'll provide a $25 cash incentive to whomever the fridge or freezer belongs to for pulling the plug on an outdated, inefficient appliance.

The average household can save up to **$260 per year** on energy bills with more efficient ENERGY STAR® certified appliances. Here are a few signs it might be time to retire an old refrigerator or freezer:

- Accumulation of ice or moisture.
- Cracking or broken seals.
- Excessive heat.
- Constantly running motor.

Learn more

Schedule a pickup

Email **entergyARrecycling@clearesult.com**
or call **833-748-7329**.

Eligibility requirements: Appliance must be a refrigerator or freezer, at least 10 years old and between 10–32 cubic feet. Appliance must be owned by an Entergy Arkansas residential customer and be in working (cooling) order, empty, clean and plugged in at the time of pickup, with water line disconnected. (Please do not cut outlet cord.)

Rebate will be mailed within six weeks of appliance pickup. Limit one (1) refrigerator and one (1) freezer per household within a 7-year period. Miniature and commercially sized refrigerators and freezers do not qualify. Any freezer must be a standalone unit. Entergy Arkansas reserves the right to revise requirements and rebate levels at any time. Rebates are subject to availability. The appliance recycling offer is not a replacement program. While we will collect the old appliance and issue the rebate, customers must purchase their own replacement appliance.

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3.5.24 POP-Sticky Note 2024

Arkansas Filing System Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Arkansas Filed Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.25 POP- CLING_Signage

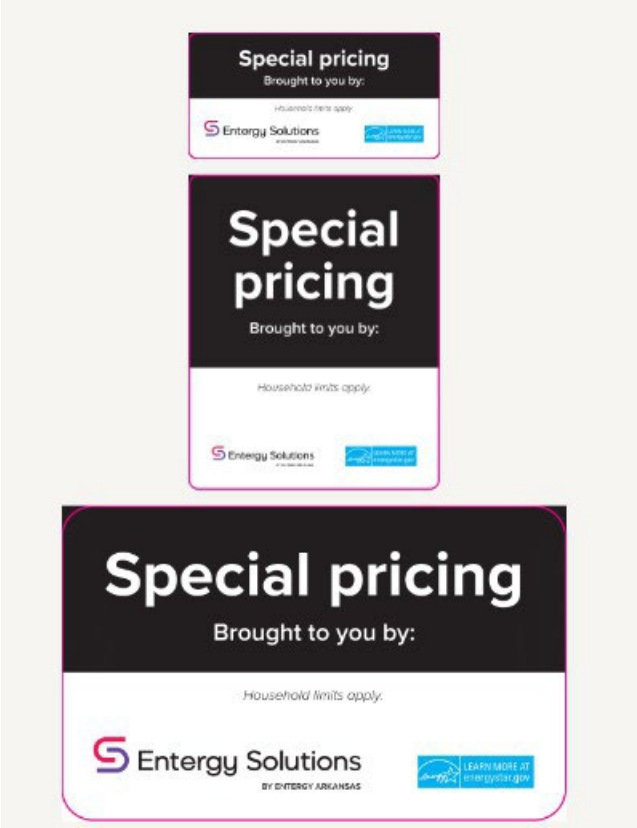


3.5.26 EA-POPS Signage _HBS



3.5.27 EA-POPS Store Labels 2024

ARSC Effective Date: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



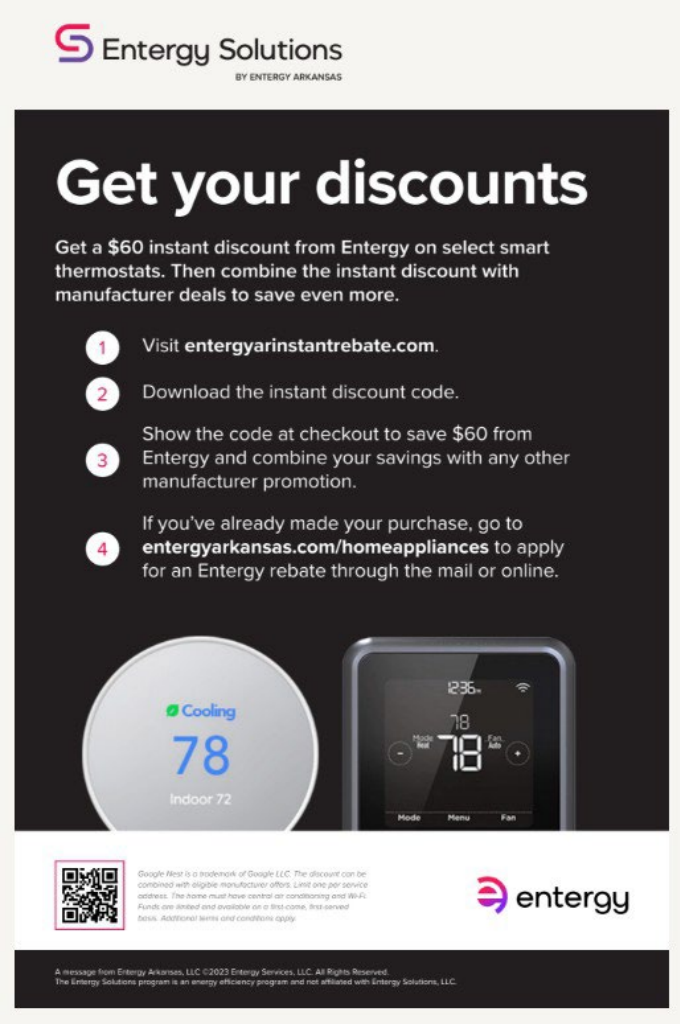


APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.28 POPS Sticker Rebrand- _STICKER_CLEAN



3.5.29 Rebrand-TSTAT SIGN_CLEAN



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.30 OPS 2024 Rebate signage_VBS_CLEAN



3.5.31 EAL Appliance Recycling Sticky Note 2024

ARSC FILED Date: 6/1/2025 3:56:49 AM: Received 6/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:51 AM: Docket 07-085-TF-Doc. 862

3.5.32 Recycling Thank You_Home Energy Kit_Sticker

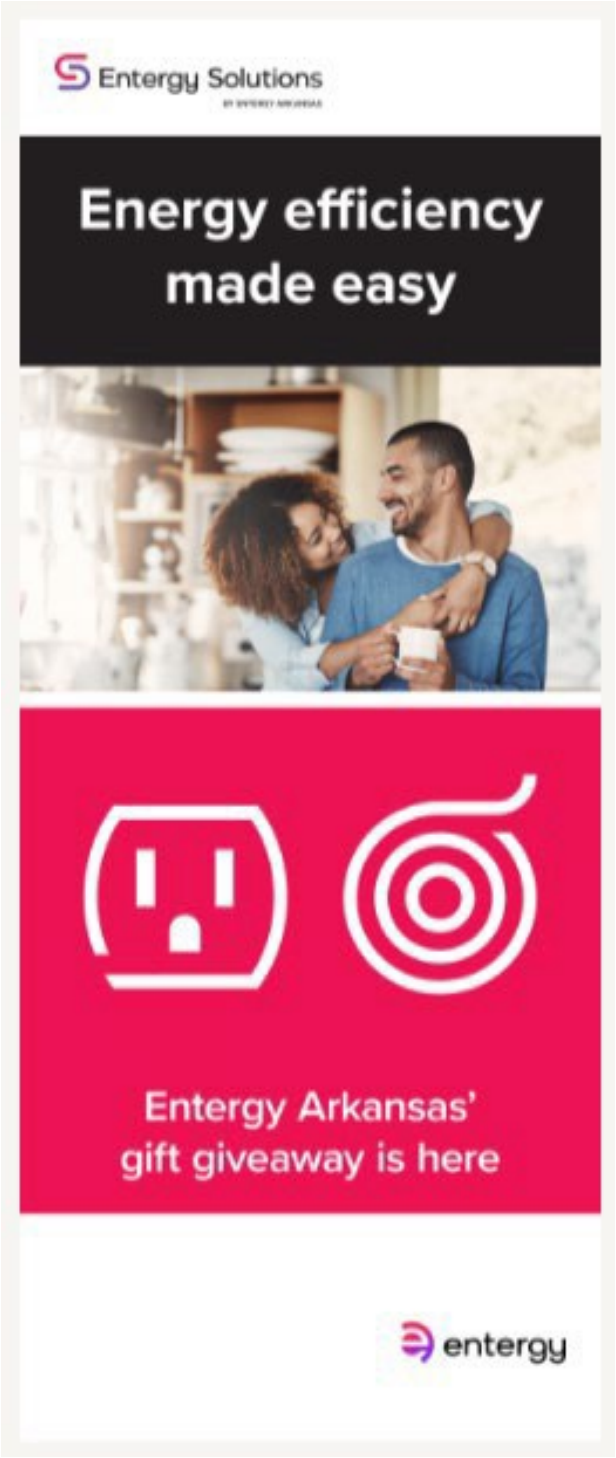


3.5.33 EA_RES_4044163_Weatherization Kit Box_FINAL



3.5.34 POPS -Signage_RECTRACTABLE_BANNER_CLEAN

ARSC FILED Time: 5/1/2024 10:35:28 AM: Arkansas Public Service Commission: 5/1/2026 11:47:21 AM: Docket 07-085-TF-Doc. 862

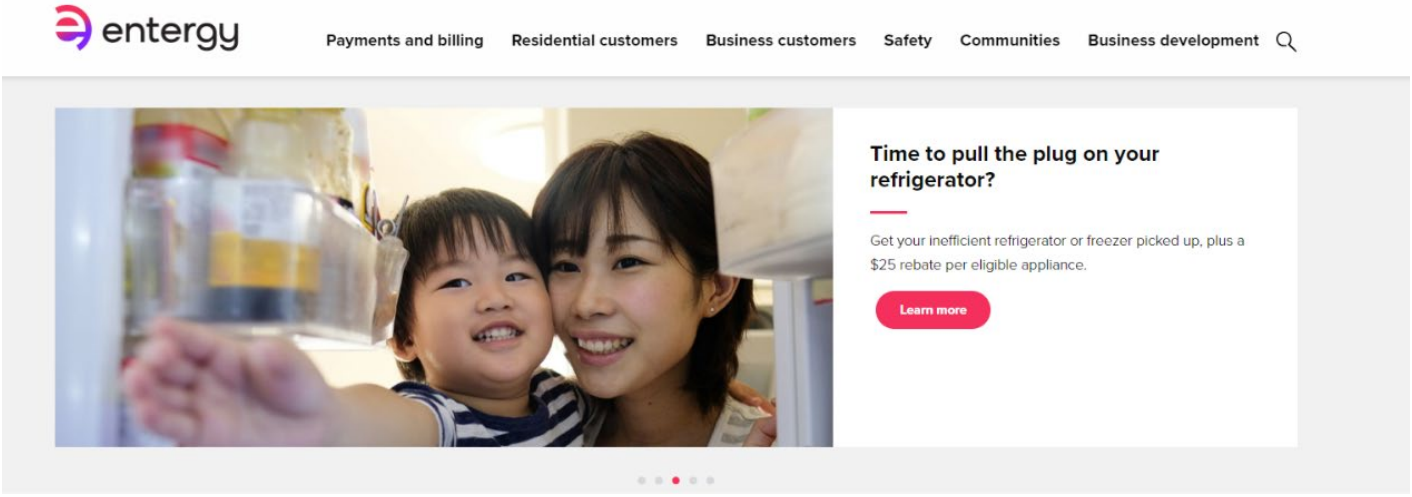


APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.35 Appliance Recycling Magnet 2024

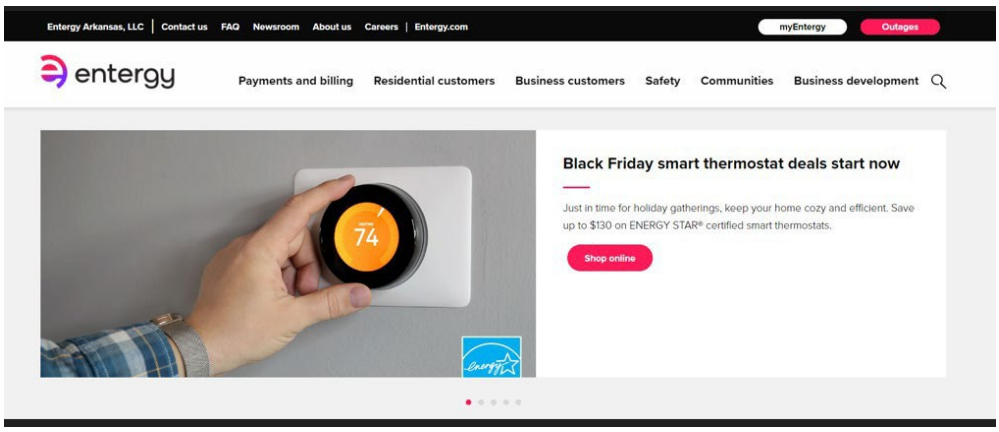


3.5.36 Homepage Banner June 2024 Recycling



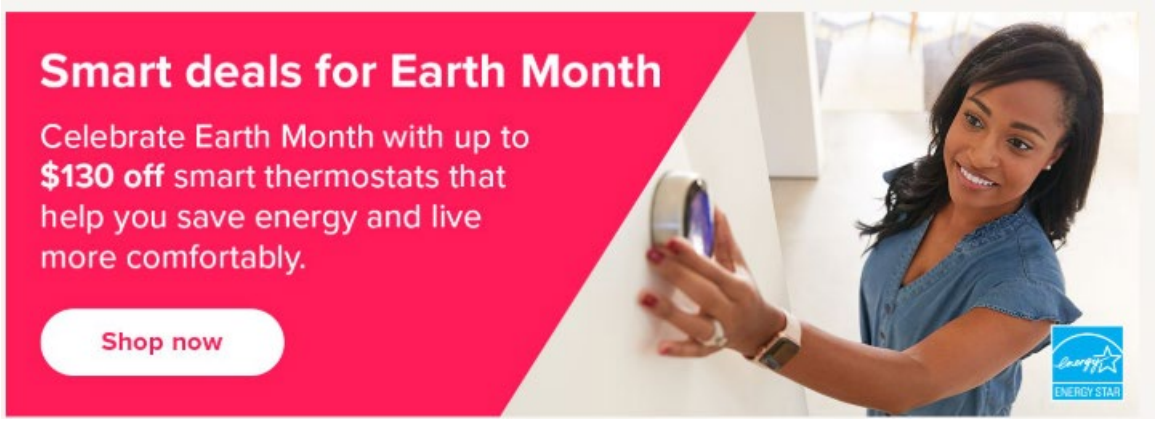
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

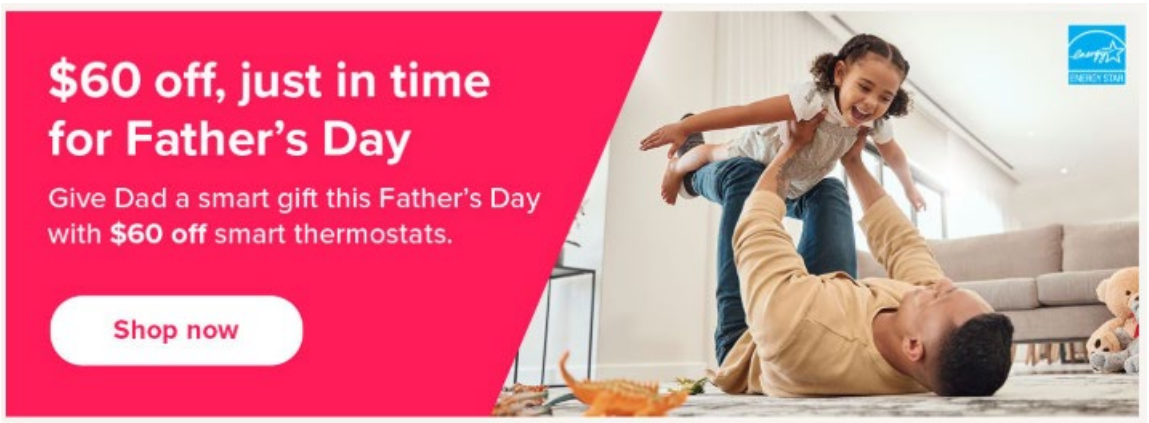
3.5.37 omepage Banner Aug 2024 Marketplace



3.5.38 POPS Marketplace Banners 2024

2025-05-01 EB Time: 5/1/2025 11:45:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862







APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

Fall into September savings

Shop deals on the products that save you energy automatically, like $60 off smart thermostats and $10 off advanced power strips.

Shop now



Stop energy vampires in their tracks: Get $10 off advanced power strips

Shop frighteningly good deals on energy-saving products this fall.

Shop now



Black Friday deals: Save $60 on smart thermostats

Black Friday savings start now.

Shop now



Our gift to you: $60 off smart thermostats

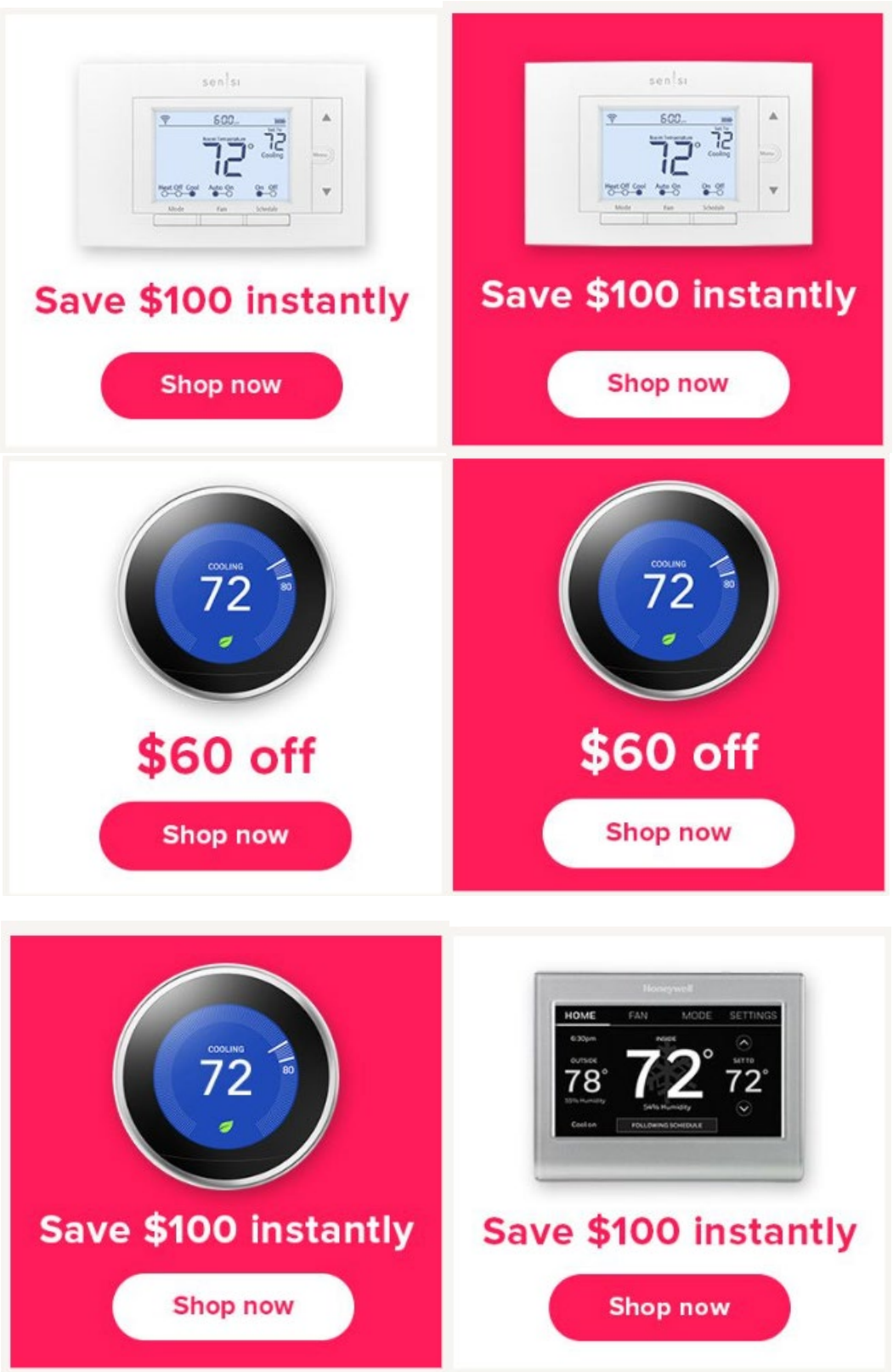
Just in time for the holidays, get $60 off smart thermostats and other great deals.

Shop now



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.39 EA POPS Marketplace Tiles 2024



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862





APSC FILED Time: 9/3/2024 1:55:23 PM: Recvd 9/3/2024 1:54:41 PM: Docket 07-085-TF-Doc. 862

3.5.40 July 2024 Circuit Newsletter EE Tips and Appliance Recycling



Explore energy efficiency tips

Summer is here, and temperatures are starting to climb. Learn how you can manage your energy use and bills.

Manage your bills



It pays to recycle your old fridge or freezer

Recycle your old fridge or freezer and receive a $25 rebate. Have your fridge or freezer picked up at no cost.

Schedule your pickup

3.5.41 August 2024 Circuit Newsletter EE Tips



Back to school energy-saving tips

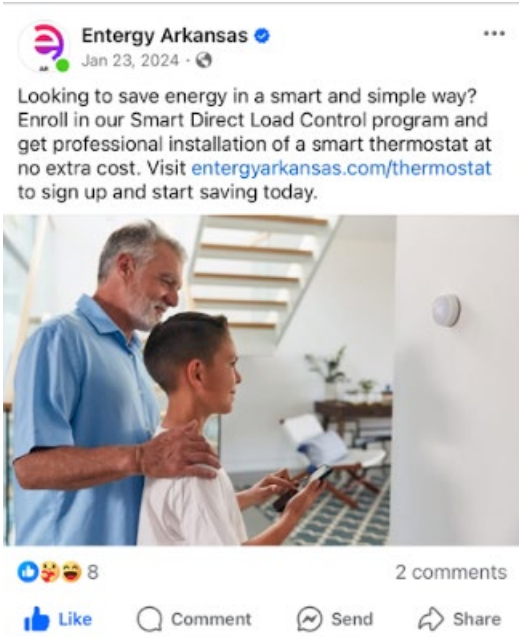
The kids are headed back to school. As your family routine changes, you can reduce your energy costs with these simple tips.

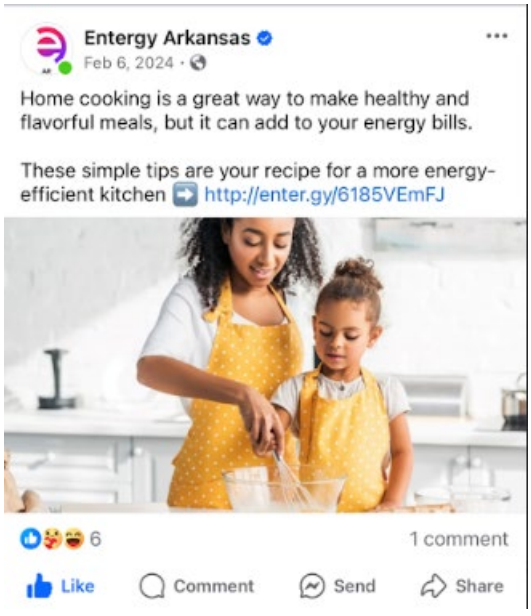
Take note of our tips

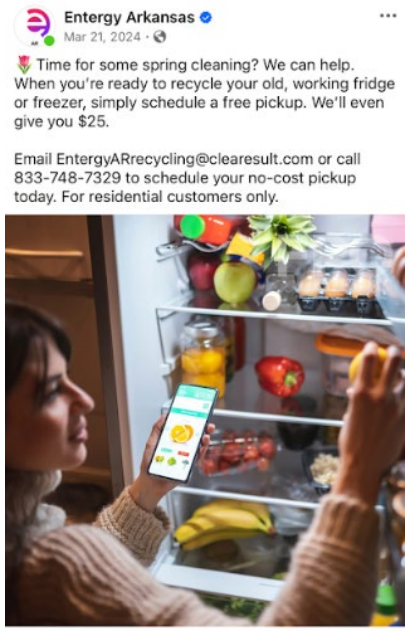
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.5.42 POPS 2024 Social Media







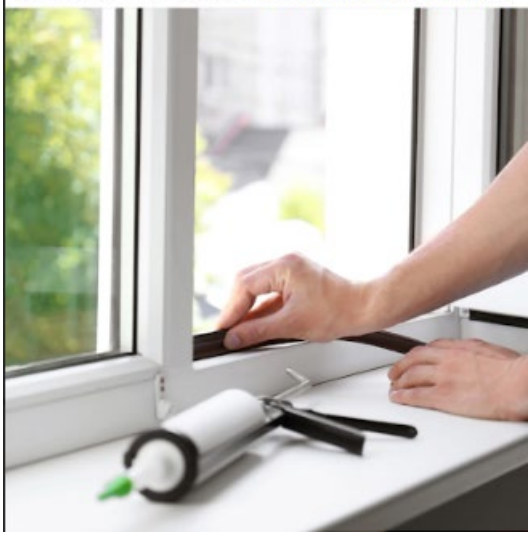


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Entergy Arkansas
Mar 22, 2024 ·

Looking for a weekend project? A properly weatherized home is a more comfortable home. 🏠💞

Entergy Arkansas has instant discounts on the weatherization supplies you need to seal in your energy savings. Shop weatherstripping, door sweeps, caulking cord and more ➡️ http://enter.gy/6189kh5dc



Entergy Arkansas
Apr 9, 2024 ·

Our Entergy Solutions team won another ENERGY STAR award! 🎉🥳

This is the sixth year in a row that Entergy Arkansas' program has been recognized for its exemplary work and ongoing commitment to energy efficiency.

Learn more ➡️ http://enter.gy/6188wXznp

#WePowerLife



entergynewsroom.com
Entergy Arkansas' Energy Efficiency Program earns ENERGY STAR Award

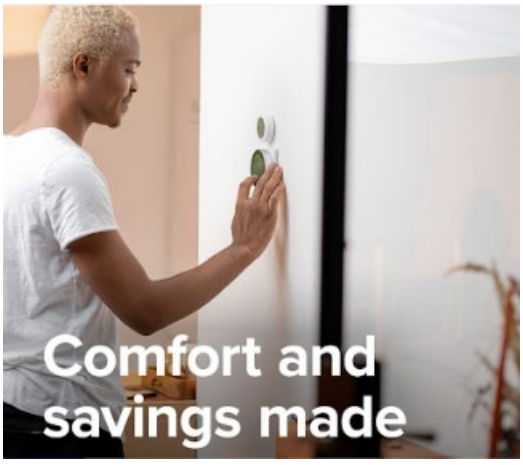
Entergy Arkansas
Apr 19, 2024 ·

🌎Celebrate Earth Day early with energy savings!🌱

Take your pick of earth-friendly smart thermostat savings:

$130 off Google Nest Learning Thermostat
$90 off Google Nest Thermostat
$100 off Honeywell Home Wi-Fi Smart Color

Shop online at entergysolutionsar-marketplace.com through April 23 to take advantage of these limited-time discounts.



Entergy Arkansas
Apr 24, 2024 ·

✅Convenient
✅Energy-efficient
✅Cost-effective

☀️Start weatherizing your home now to get ready for those soaring summertime temps.

🛒Shop door sweeps, rope caulk, weathersealing and more: http://enter.gy/6186bonlY



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Entergy Arkansas
Apr 29, 2024 ·

At Entergy Arkansas, we strive to provide you and your family with access to the best in home energy efficiency. Our Entergy solutions program offers a variety of solutions that seamlessly integrate into your home, reduce energy, and help you save money. Visit entergysolutionsar.com to learn more.



Entergy Arkansas
May 3, 2024 ·

💪 Let us do the heavy lifting and recycle your inefficient appliance. We'll even give you $25.

🚚 Step 1: Schedule a free pickup for your old working fridge or freezer.
💚 Step 2: Receive a $25 rebate and help keep old appliances out of the landfill.

Learn more ➡️ http://enter.gy/6188jrA6s



Entergy Arkansas
May 21, 2024 ·

🟥 Banish outside allergens and drafts. 😌 Keep cool, clean air inside. 💰 Save up to 28%.

Shop our online marketplace for weather sealing, door sweeps, caulking cord and more to keep your home comfortable and efficient.

Learn more ➡️ http://enter.gy/6184dqlTr



Entergy Arkansas
May 31, 2024 ·

🤫 Be ready for summer temperatures and increased humidity and allergies. Get $25 off ENERGY STAR® certified dehumidifiers and 10% off ENERGY STAR certified air purifiers on the Entergy Arkansas marketplace.

You can find these deals and more at: entergy-arkansas.com/marketplace



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Entergy Arkansas
Jun 10, 2024 ·

Feeling the heat? A few simple DIY weatherization improvements can have a surprising effect on your summer energy costs and comfort. 😎

Shop our online marketplace to save instantly on weatherstripping, rope caulk, door sweeps and other cost-effective upgrades ➡️ http://enter.gy/61845nMqK



Entergy Arkansas
Jul 3, 2024 ·

😎 Cool fact: Purchasing energy-saving products in a bundle means you'll save $28. Get more comfortable and efficient with the Entergy Arkansas Beat the Heat Kit, which includes:

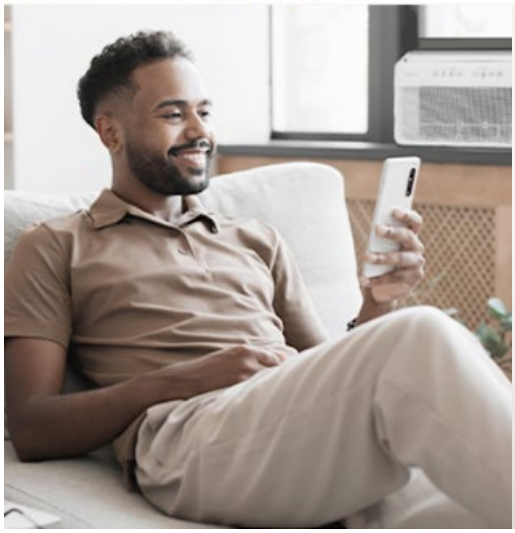
🔌 An advanced power strip
🚰 Kitchen and faucet aerators
🔴 Self-adhesive V-seal weather strip
😴 An LED night light

Shop our online marketplace ➡️ http://www.entergyarkansas.com/marketplace



Entergy Arkansas
Jul 4, 2024 ·

🎆 Celebrate the 4th with firework-worthy savings: Get $50 off select room air conditioners.
☀️ Get ready for the heat now and save energy all summer with an ENERGY STAR® certified room air conditioner.
🛒 Shop the Entergy Arkansas online marketplace and save instantly: http://enter.gy/61829XFT6



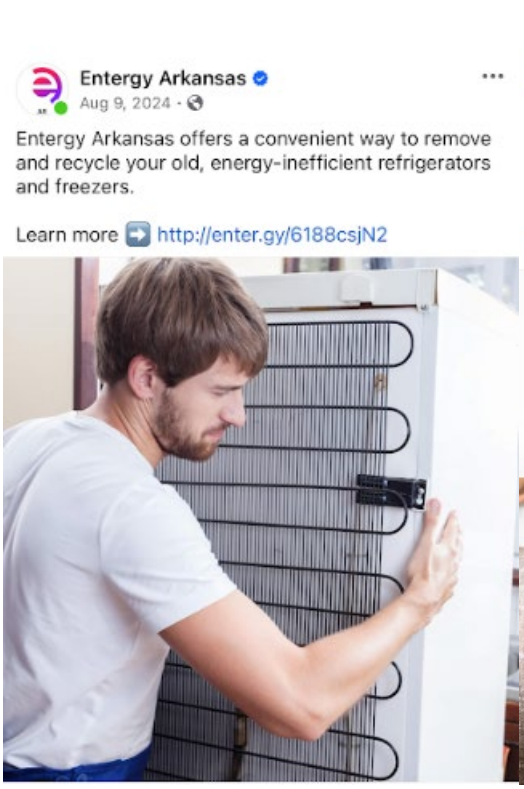
Entergy Arkansas
Jul 29, 2024 ·

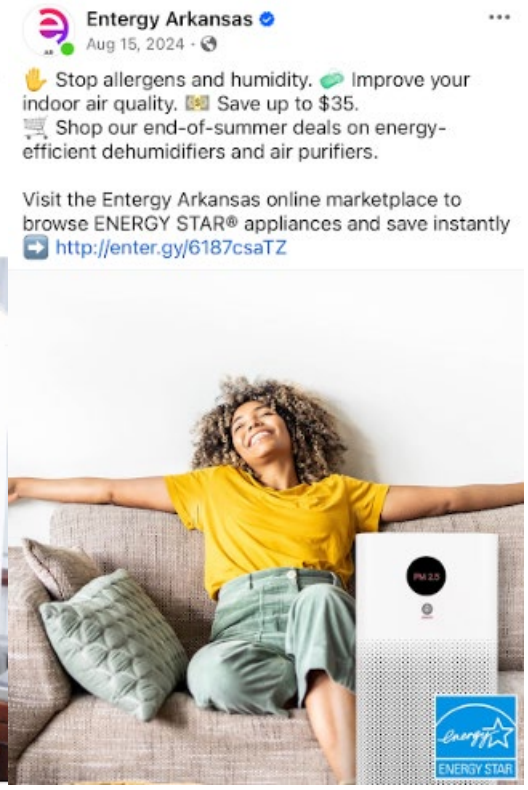
🌤️Decrease the heat — and your energy waste — with a few simple weatherization upgrades.

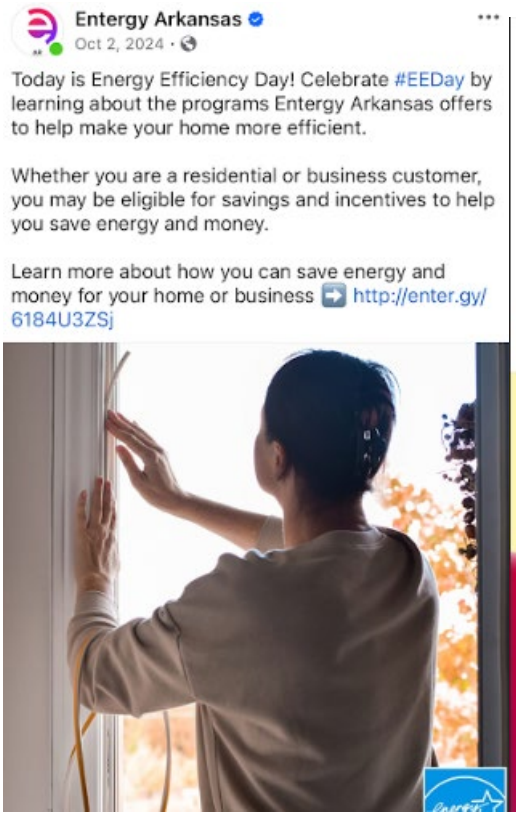
Shop the Entergy Arkansas online marketplace to save instantly on weatherstripping, door sweeps, rope caulk and other energy-saving upgrades ➡️ http://enter.gy/6181co68b

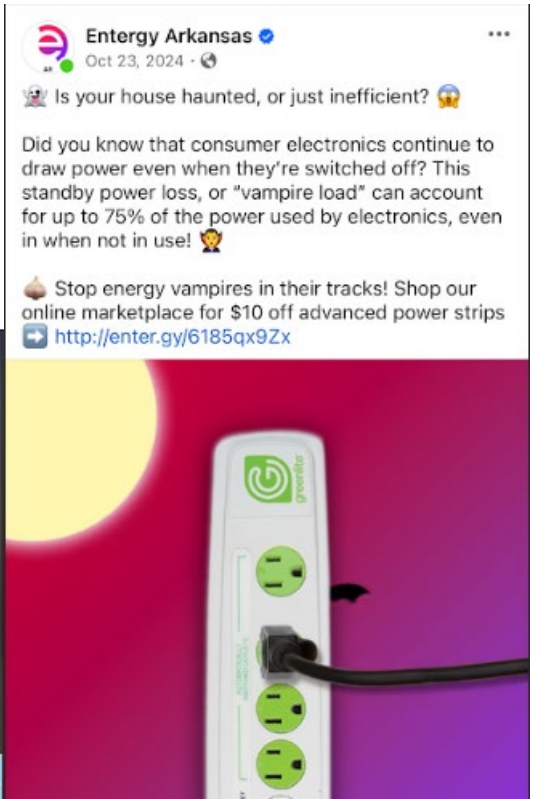


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Entergy Arkansas
Oct 9, 2024 ·

Entergy Arkansas is proud to celebrate ENERGY STAR® Day and help customers save today, save tomorrow and save for good. Find available incentives for ENERGY STAR certified products on the Entergy Arkansas Marketplace at entergyarkansas.com/marketplace.

#EnergyStarDay



Entergy Arkansas
Oct 24, 2024 ·

Upgrade to the next level of energy efficiency with an ENERGY STAR® certified Sensi Touch smart thermostat. Take advantage of our Smart Direct Load Control Program and order yours today. Visit entergyarkansas.com/thermostat for details and start saving today.



Entergy Arkansas
Nov 29, 2024 ·

Get $60 off smart thermostats on the Entergy Arkansas marketplace during our Black Friday sale. Smart thermostats offer it all: sleek desig... See more



Entergy Arkansas
Nov 30, 2024 ·

🔍 Find discounts on weatherization products—and start saving energy ✨instantly✨ with window seals, rope caulk, door sweeps and more.

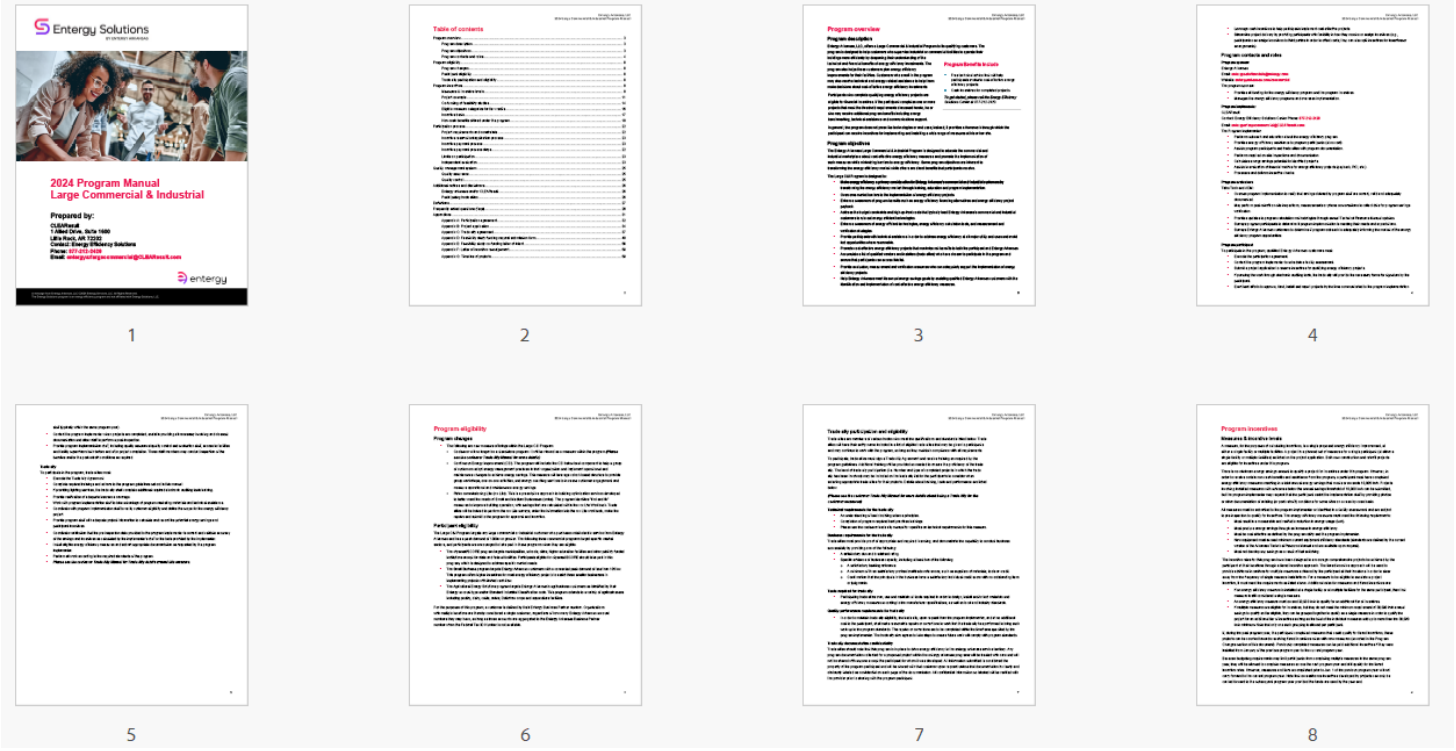
Shop these and other deals at our online marketplace ➡️ entergyarkansas.com/marketplace



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3.6 Large Commercial and Industrial Solutions

3.6.1 Large C&I Program Manual 2024

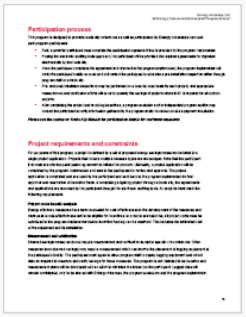


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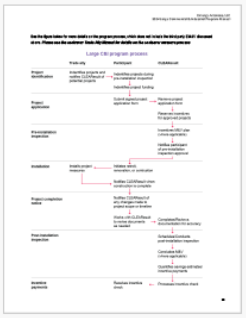

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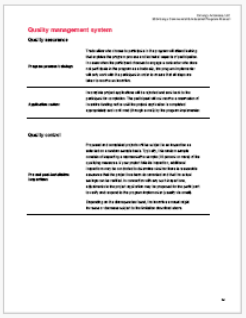

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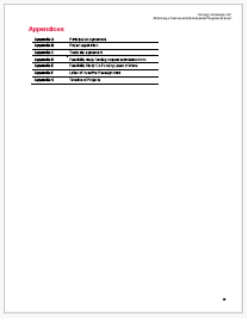

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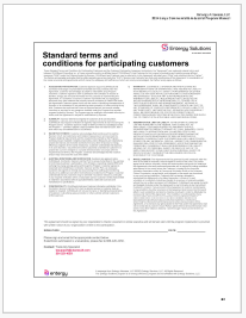

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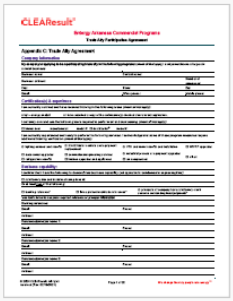


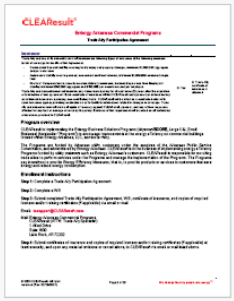
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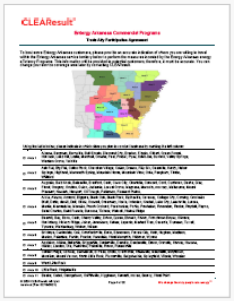
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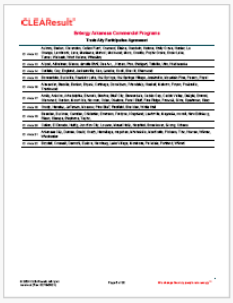
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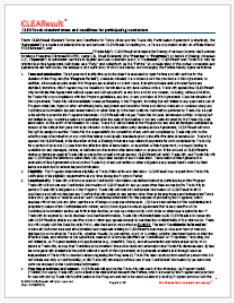

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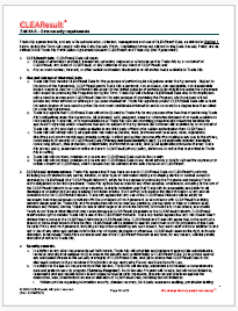

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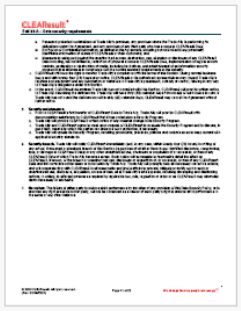

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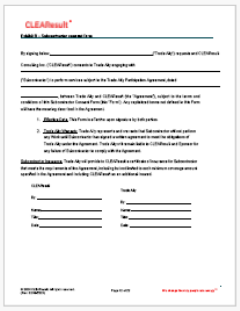

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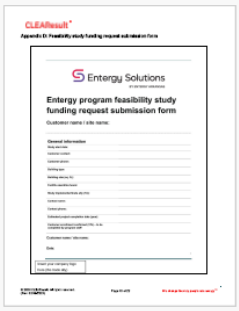

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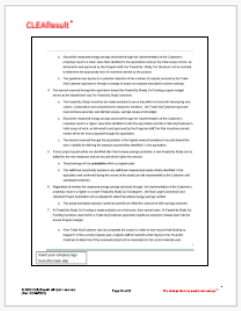

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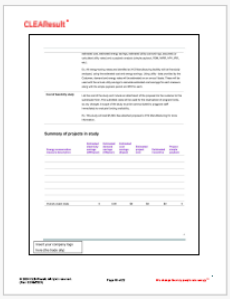

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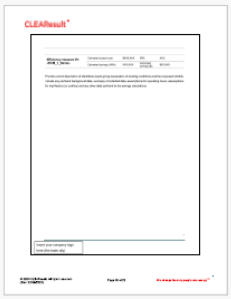
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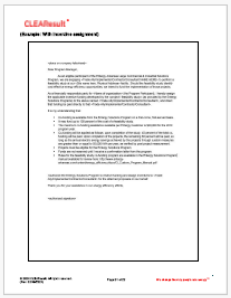
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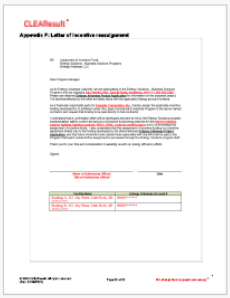
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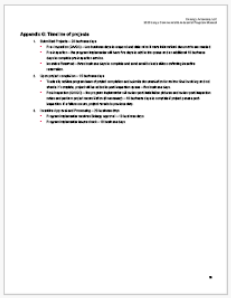
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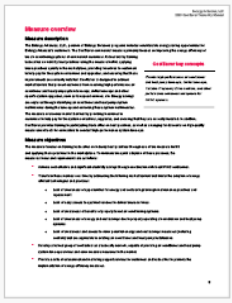
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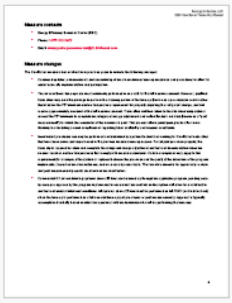
3.6.2 2024 Coolsaver Program Manual 2024

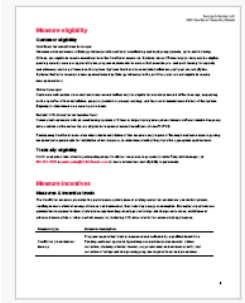


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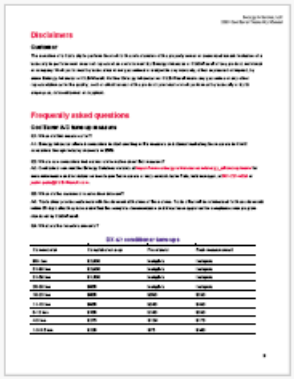

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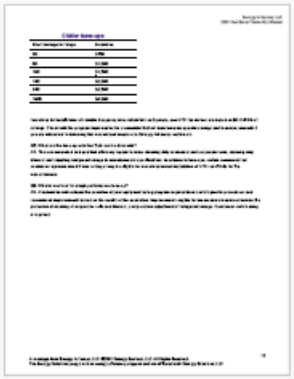

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3.6.3 Compressed Air System Fact Seet C&I Flyer

Entergy Solutions
BY ENTERGY ARKANSAS



Compressed air systems

Get big savings from your system

Did you know that electric compressed air systems account for as much as 30% of an industrial facility's energy costs? We can help your business use less. By joining one of the Entergy Arkansas energy efficiency programs, you can find out how much energy your system is wasting and receive suggestions for effective repair and replacement options, such as repairing air leaks and installing variable speed drives or no-loss drain valves.

Benefits

Newer variable speed drive compressors are highly efficient, quieter and more stable. This boosts reliability and reduces maintenance costs. Plus, the cash incentives you'll receive from Entergy Arkansas will reduce your up-front costs, shortening the payback period on your investment.

How to participate

1. Contact us at **877-212-2420** or visit **entergyarkansas.com/commercial** to enroll in one of the Entergy Arkansas energy efficiency programs.
2. We'll perform an on-site inspection of your existing systems—at no cost to you.
3. You'll receive a customized project recommendation, tailored to your company's needs.
4. We will provide a list of qualified participating trade allies who are trained in the Entergy Arkansas energy efficiency programs.
5. The system upgrades will be installed.
6. You'll receive cash incentives for all qualifying completed projects.

Air leak facts

- Leaks typically account for 20–30% of all air use in a compressor system.*
- Leaks are best detected by an ultrasonic acoustic detector that recognizes the high-frequency hissing sound that often accompanies an air leak.**
- You need 7–8 horsepower of electrical power to operate a 1 HP air motor.*



*Source: U.S. Department of Energy
**Source: ENERGY STAR®

Ready to save? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

entergy

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3.6.4 2024 CEI Overview Flyer

Entergy Solutions



Entergy Arkansas' Core Continuous Energy Improvement (Core CEI) initiative

Take control of your energy costs

Energy is typically one of an organization's largest operating expenses and impacts everything from the bottom line to occupant comfort. For many, limited time, awareness and expertise prevent optimal management of this resource. We can help.

Core CEI provides energy efficiency strategies, consulting advice and technical expertise at no additional cost to customers. This changes the way people use energy within your facility, which leads to quantifiable savings and fosters a culture of energy awareness.

What Core CEI offers

- Identification and qualification of low- and no-cost energy-saving opportunities with quick or immediate payback periods
- On-site technical analysis and assessments
- Milestone-based incentives for completing the energy scan, attending two workshops and achieving a 2.5% 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 energy use
- Networking with other Core CEI participants and learning best practices for energy management

How it works

Core CEI is built on principles of continuous improvement and organizational change, integrating cost-saving and operational excellence initiatives such as Lean and Six Sigma. Core CEI sets up your organization to save energy by providing your facility and operational managers with on-call energy consultants. Think of it as empowering your organization to control your energy use. Participants attend Core CEI workshops, complete behavioral or operational energy-saving actions, and engage their leadership and organization in savings efforts and progress.

Milestone	Criteria	Incentive amount	Total incentive
Complete energy scan and three energy efficiency projects	Customer agreed to participate, has completed energy scan and completed three projects from their CEI opportunity register	$500	$4,250
Attend both workshops	Customer has attended both Core CEI workshops	$500	
Annualized energy savings event or exceed 2.5% of annual energy usage	Customer has implemented Core CEI projects ≥ 2.5% of annual energy usage	$3,250	

entergy

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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 Entergy Arkansas															■

Questions?
Contact the Energy Efficiency Solutions Center
at **877-212-2420** or visit **entergyarkansas.com/commercial**

entergy

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3.6.5 CEI Reserve Your Seat Flyer



Entergy Solutions

Reserve your Continuous Energy Improvement cohort seat

Entergy Arkansas is pleased to offer your organization the opportunity to participate in our upcoming CEI initiative. Please review the following information, participation guidelines and criteria.

Continuous improvement process for saving and managing energy

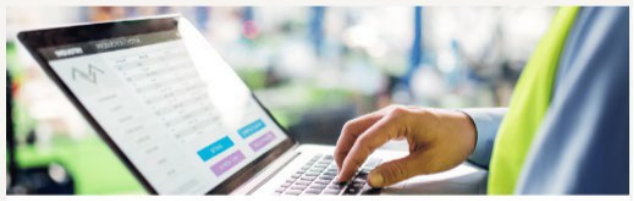
- **Choose** a member of your executive management team to be the executive sponsor to oversee CEI implementation, and conduct regular progress reviews with the energy champion and team.
- **Designate** an energy champion to lead CEI efforts and provide the energy champion with resources and oversight reasonably necessary to accomplish the goals described in this document.
- **Establish** an energy team consisting of representatives from various sites and functional areas.
- **Establish** an energy policy or charter that includes an energy reduction goal and assigns responsibilities to appropriate persons for meeting that goal.
- **Implement** cost-effective energy efficiency activities and projects (as defined by your organization).
- **Provide** information to establish an energy-use baseline and maintain an energy performance model.

Benefits

- Potentially reduce utility costs for electricity and other energy sources.
- Gain access to energy management training resources for your staff.
- Receive tools and templates to help implement strategic energy management.
- Receive knowledgeable coaching and mentoring.
- Get technical assistance to help staff identify and quantify energy-saving opportunities.
- Get documentation of energy consumption levels and savings.
- Earn incentives for energy savings.

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Commitments and requirements

The CEI initiative begins with a one-year initial engagement with the option to continue as part of the CEI alumni cohort. The initiative will engage the participants' designated representatives in on-site meetings and peer-to-peer group training sessions that will typically occur monthly during the first CEI year. Participants are asked to send to each session at least two staff members who must actively participate, including presenting on relevant topics or progress.

Participants are asked to make a good faith effort to fulfill the requirements of participation. Lack of responsiveness on communications, repeated missed attendance at meetings or trainings, last-minute cancelations or other similar actions indicating a lack of organizational commitment may result in CEI services being withdrawn.

The number of participants is limited and designed to meet CEI savings targets. Entergy Arkansas and CLEAResult reserve the right to manage participation according to CEI initiative design and available space and to address potential competitive concerns between prospective participants.

Customer participation agreement

Participants are asked to sign a customer participation agreement, which sets forth the legally binding terms for the Entergy Solutions programs including confidentiality, incentives and liability. Participation in CEI is voluntary, and there are no additional costs beyond your staff engagement.

Participant information

Company (participant) name		Date	
Company address	City	State	ZIP
Executive sponsor (print name)	Executive sponsor title		
Primary contact/energy champion (print name)			
Energy champion phone number	Energy champion email address		

Email this document to richard.gregg@clearesult.com.

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3.6.6 CEI Direct Install Fact Sheet

Entergy Solutions
BY ENTERGY ARKANSAS



Cut down your energy use and your bill

Entergy Arkansas offers no-cost upgrades to help you cut energy use and save money. Get in touch today, and technicians will install electricity- and water-saving devices at your business for no additional charge. Your upgrades may include:

- Low-flow aerators.
- Low-flow showerheads.
- Pre-rinse spray valves.
- Weather stripping.
- Overhead door weather stripping.
- Compressed air leak repair.



If you're an Entergy Arkansas commercial customer, contact us to see if you qualify to start saving immediately with these energy-saving devices at no additional cost.

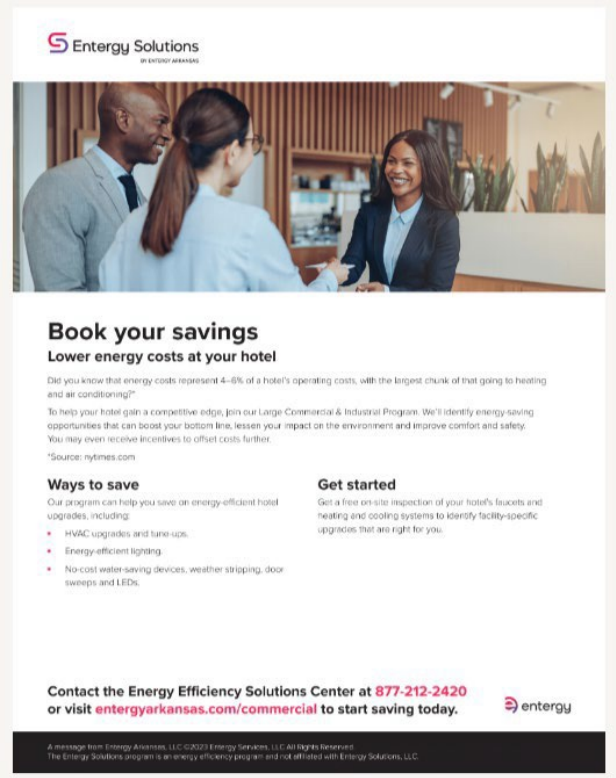
Questions? Contact Bryan Vericker at 501-221-4041 or bryan.vericker@clearesult.com. You can also visit entergyarkansas.com/commercial to learn more about commercial energy efficiency programs.

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3.6.7 Book Your Savings Fact Sheet C&I



Entergy Solutions

Book your savings

Lower energy costs at your hotel

Did you know that energy costs represent 4–6% of a hotel's operating costs, with the largest chunk of that going to heating and air conditioning?*

To help your hotel gain a competitive edge, join our Large Commercial & Industrial Program. We'll identify energy-saving opportunities that can boost your bottom line, lessen your impact on the environment and improve comfort and safety. You may even receive incentives to offset costs further.

*Source: nytimes.com

Ways to save

Our program can help you save on energy-efficient hotel upgrades, including:

- HVAC upgrades and tune-ups.
- Energy-efficient lighting.
- No-cost water-saving devices, weather stripping, door sweeps and LEDs.

Get started

Get a free on-site inspection of your hotel's faucets and heating and cooling systems to identify facility-specific upgrades that are right for you.

Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial to start saving today.

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Available incentives

Some of the energy-saving measures eligible for incentives under the program include:

Upgrade	Estimated incentive	Estimated annual energy cost savings
Replacing a 175-watt metal halide wall pack with an 80-watt LED.	$77	$46
Replacing a 400-watt metal halide in your parking lot with a 190-watt LED.	$157	$95
Installing weather stripping on exterior doors.	No charge	$160
Installing an aerator that slows the flow of a faucet to 0.5 gallons per minute.	No charge	$16
Installing a low-flow showerhead.	No charge	$30
Installing an ENERGY STAR® certified ice maker.	$45	$27
Installing PTAC occupancy setback controls.	$58	$35
Replacing a four-lamp, four-foot T8 lighting fixture with two 18-watt LED tubes.	$77	$49
Installing an energy-efficient exit sign.	$53	$32

Other energy-saving upgrades are also eligible for incentives, including high-efficiency HVAC units, water heaters, gaskets and strip curtains.

See how it adds up

By installing just a few energy-efficient upgrades in a typical* hotel room, you could earn an estimated incentive of $58 and save $56 in annual energy costs.

*Typical hotel room consisting of four LED lighting fixtures, one shower and one sink.

Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial to start saving today.

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3.6.8 Lighting C&I Flyer

Entergy Solutions



Lighting controls and sensors

Lighting and your building

According to ENERGY STAR®, lighting consumes 35% of a building's electricity, more than any other end use. Lighting sensors are control devices that allow you to better manage your energy use by automatically turning lights on and off based on space needs. Using infrared or ultrasonic technology, occupancy sensors provide automatic control. Similarly, daylight controls provide automatic control based on incoming natural light.

Benefits

Occupancy sensors provide convenience by turning lights on automatically when someone enters a room and save energy by turning lights off soon after the last occupant has left the room. Projects typically pay for themselves in energy savings alone within a few years; however, Entergy Arkansas offers incentives to help offset the initial cost.

More on sensors

Ultrasonic sensors detect sound, while infrared sensors detect heat and motion. Occupancy sensors must be located where they will detect occupants or occupant activity in all parts of the room.

*Source: energystar.gov

How to participate

1. Contact the Energy Efficiency Solutions Center at **877-212-2420** or **entergyarkansas.com/commercial** to enroll in one of Entergy's commercial and industrial programs.
2. We will provide a list of qualified participating trade allies who are trained in the Entergy Arkansas energy efficiency programs.
3. Your selected trade ally will schedule a visit to your facility to perform an on-site, room-by-room inspection of the existing lighting system—at no cost to you. This assessment will investigate the different types of fixtures used, number of lamps, hours of operation and existing light levels.
4. The trade ally will create a customized list of recommendations for your business, designed to increase efficiency, reduce your Entergy bills and improve both lighting quality and comfort.
5. You'll receive cash incentives for any qualified completed projects.

Lighting facts

- Lighting uses about 18% of the electricity generated in the U.S.*
- Lighting in commercial buildings accounts for approximately 71% of overall lighting electricity use in the U.S.*
- Improved lighting enhances visual comfort, reduces eye fatigue and improves overall performance.

Questions? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.6.9 Smart Business Commercial Flyer

Entergy Solutions
BY ENTERGY ARKANSAS



Saving energy is smart business

The Entergy Solutions program helps commercial customers improve the energy efficiency of their buildings or facilities. Get in touch today and our program team will:

1. Schedule a meeting with company stakeholders to discuss possible energy efficiency upgrades that could be completed for the current year and subsequent four years. The team will discuss company priorities, savings potential, possible projects, estimated costs and incentives for five years in advance of any potential expansion, site growth or new construction.
2. Conduct site walk-throughs to discover opportunities for energy reduction. These walk-throughs will help you and our team gain a better understanding of your energy usage and how to best assess your direct needs.
3. Use site walk-through information along with any applicable operations data available to create an energy usage baseline. This information will be used to help calculate a savings profile for the identified energy efficiency opportunities, as well as a financial analysis of potential energy efficiency projects.
4. Present the financial analysis findings to company stakeholders, outlining what energy efficiency projects make good financial sense and help you make an informed Entergy Solutions program participation decision.

Benefits

- Understand the Entergy Solutions program offerings.
- Obtain a no-cost energy assessment.
- Receive a financial analysis of potential energy efficiency projects.
- Make a well-informed participation decision.

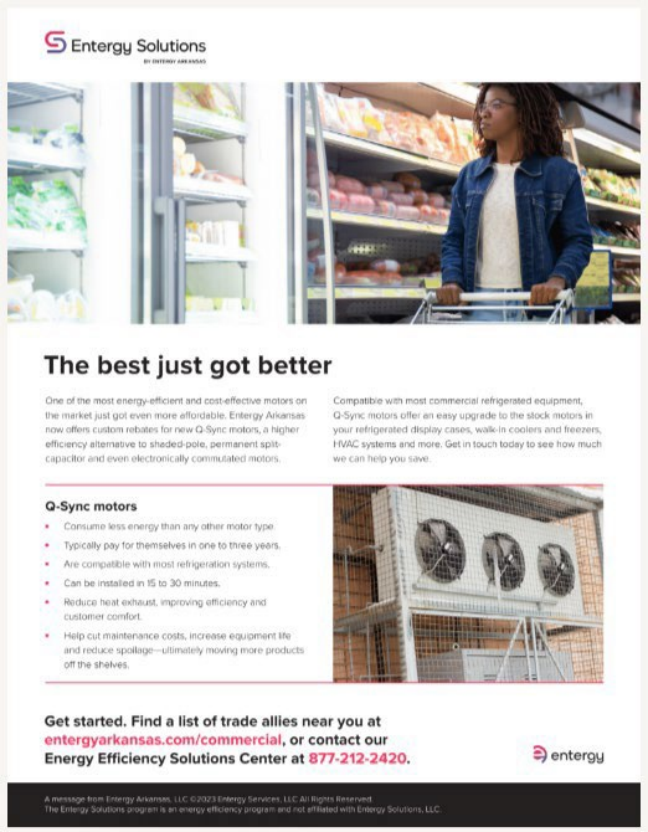
It's easier than ever to save energy and money. Ready to begin? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.6.10 Single Measure Fact Sheet C&I



Entergy Solutions

The best just got better

One of the most energy-efficient and cost-effective motors on the market just got even more affordable. Entergy Arkansas now offers custom rebates for new Q-Sync motors, a higher efficiency alternative to shaded-pole, permanent split-capacitor and even electronically commutated motors.

Compatible with most commercial refrigerated equipment, Q-Sync motors offer an easy upgrade to the stock motors in your refrigerated display cases, walk-in coolers and freezers, HVAC systems and more. Get in touch today to see how much we can help you save.

Q-Sync motors

- Consume less energy than any other motor type.
- Typically pay for themselves in one to three years.
- Are compatible with most refrigeration systems.
- Can be installed in 15 to 30 minutes.
- Reduce heat exhaust, improving efficiency and customer comfort.
- Help cut maintenance costs, increase equipment life and reduce spoilage—ultimately moving more products off the shelves.

Get started. Find a list of trade allies near you at entergyarkansas.com/commercial, or contact our Energy Efficiency Solutions Center at 877-212-2420.

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A cooler way to save

How it works

1. Discover. You or a participating trade ally identifies your facility's existing evaporator fan motors.
2. Verify. An Entergy Arkansas representative verifies the existing evaporator fan motors.
3. Repair. You or your trade ally replaces existing motors with Q-Sync motors. You or your trade ally documents the material cost and labor or saves a copy of the invoice if using an outside contractor.
4. Confirm. An Entergy Arkansas representative confirms all replacements.



Motor comparison

	Q-Sync	ECM	Permanent split-capacitor	Shaded-pole
Operational efficiency	70–80%	50–60%	40–50%	20%
Refrigerated space—estimated annual energy costs per motor*				
9–12 Watt	$14.96	$20.35	$40.62	$48.07
38–50 Watt	$39.91	$53.96	$68.32	$126.96
Freezer space—estimated annual energy costs per motor*				
9–12 Watt	$17.77	$24.18	$48.25	$58.17
38–50 Watt	$47.41	$64.10	$81.16	$149.61

*This analysis assumes an electric rate of $0.08 per kWh.

Let's sync up. Visit entergyarkansas.com/commercial to find a trade ally near you, or call 877-212-2420.

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3.6.11 Restaurant Fact Sheet C&I

Entergy Solutions



Serve up the savings

Achieve long-term savings at your restaurant through energy efficiency

Did you know that the average restaurant uses 5–10 times more energy per square foot than other commercial buildings?* Our Large Commercial & Industrial Program and Small Business Program help restaurant owners like you invest in cost-effective, turnkey improvements that will narrow the energy-consumption gap between you and neighboring businesses. Since these improvements result in lower energy bills month after month, they often pay for themselves over time while making your restaurant more comfortable for customers and employees.

*Source: energy.gov

Ways to save

Our program offers incentives and services on energy-efficient equipment and measures, including:

- Upgrading heat pumps, air conditioning units and other HVAC equipment with a CoolSaver℠ A/C Tune-up.
- Implementing technologies that boost refrigeration efficiency.
- Installing energy-efficient lighting and advanced lighting controls.
- Equipping your kitchen with demand-based ventilation controls.

Get started

To help you identify facility-specific upgrades that are right for you, we offer free on-site inspections of your restaurant's refrigeration, lighting, and heating and cooling systems.

To start saving, contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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Available incentives

Some of the energy-saving measures eligible for incentives under the program include:

Upgrade	Estimated annual electricity savings (kWh)	Estimated annual energy cost savings
Refrigeration		
Installing an anti-sweat heater control on a refrigerated display case with five doors.	2,737	$246
Equipping a 3' x 7' freezer or refrigerator door with a strip curtain.	3,375	$304
Installing an energy-efficient novelty case cooler.	4,604	$414
Installing a refrigerator door gasket.	1,192	$107
HVAC controls		
Installing hood controls in your kitchen.	4,227	$380
Upgrading to SEER 16 or better HVAC unit.		
Using controls for scheduling, set points, setbacks and improved occupant comfort.		
Lighting controls		
Installing a two-fixture fluorescent or LED occupancy sensor in one of your bathrooms.	68	$6
Lighting		
Replacing one 100-watt incandescent lamp in your freezer with a 9-watt LED.	367	$33
Replacing a four-lamp, four-foot T8 lighting fixture with two 18-watt LED tubes.	362	$33
Installing an energy-efficient exit sign.	353	$32
Other		
Installing an aerator that slows the flow of a faucet to 0.5 gallons per minute.	1,437	$129
Installing a pre-rinse spray valve that slows the water flow while maintaining pressure.	5,000	$450

Other energy-saving measures are also eligible for incentives, including high efficiency HVAC units, water heaters, gaskets and strip curtains.

To start saving, contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.6.12 Retro Commissioning Flyer C&I

Entergy Solutions



Retrocommissioning-Lite

Optimize your building (and your savings)

The Entergy Solutions program has expanded its offerings to commercial customers to include Retrocommissioning-Lite. Where full retrocommissioning requires comprehensive, time-intensive and costly engineering services, Retrocommissioning-Lite is a rightsized alternative for small and medium-sized businesses. Through the Entergy Solutions programs, Entergy Arkansas offers a streamlined, no-cost energy survey to identify energy inefficiencies and correct them to improve building operations.

Benefits

- Improve building energy performance and reduce energy use by an estimated 5%.
- Advance occupant comfort and productivity.
- Extend equipment life and reduce maintenance needs.
- Increase internal knowledge of building systems and controls.

Who is eligible?

Facilities under 100,000 square feet using an Entergy Solutions trade ally may be eligible for Retrocommissioning-Lite. Common projects include programmable thermostat scheduling, ventilation adjustments, economizer installations and more.

How to participate

1. Call **877-212-2420** or visit **entergyarkansas.com/commercial** to enroll in one of the Entergy Solutions programs.
2. We'll provide a list of Entergy Solutions trade allies trained in the Entergy Arkansas energy efficiency offerings.
3. Your selected trade ally will perform a no-cost on-site inspection to examine your existing building control systems.
4. You'll receive a list of customized recommendations for your business designed to increase efficiency, reduce your Entergy Arkansas bills, optimize your facility's performance and improve occupant comfort.
5. Get cash incentives for all qualifying completed projects.

Did you know?

Approximately 72% of the measures implemented through retrocommissioning are centered around operations and control. That means lower costs for you.

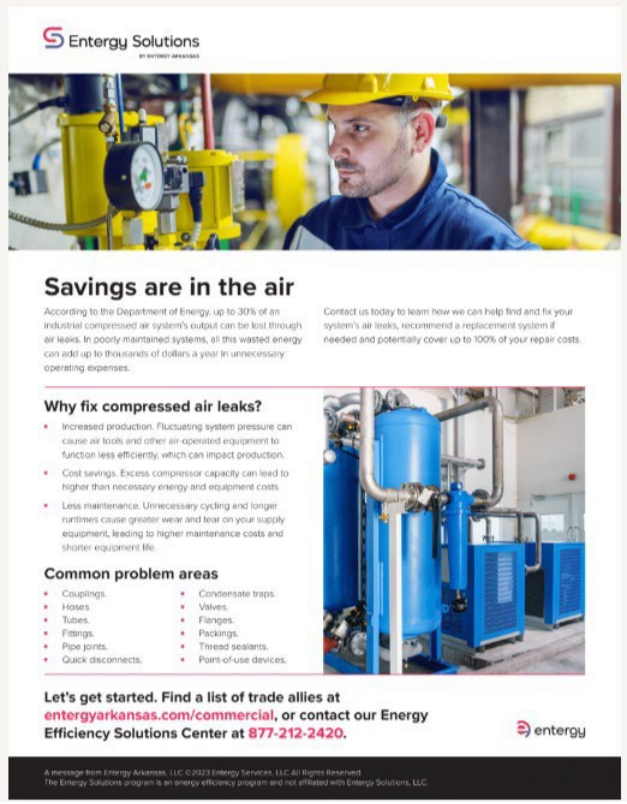
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3.6.13 Single Measure Air Leaks Flyer C&I



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Savings are in the air

According to the Department of Energy, up to 30% of an industrial compressed air system's output can be lost through air leaks. In poorly maintained systems, all this wasted energy can add up to thousands of dollars a year in unnecessary operating expenses.

Contact us today to learn how we can help find and fix your system's air leaks, recommend a replacement system if needed and potentially cover up to 100% of your repair costs.

Why fix compressed air leaks?

- Increased production. Fluctuating system pressure can cause air tools and other air-operated equipment to function less efficiently, which can impact production.
- Cost savings. Excess compressor capacity can lead to higher than necessary energy and equipment costs.
- Less maintenance. Unnecessary cycling and longer runtimes cause greater wear and tear on your supply equipment, leading to higher maintenance costs and shorter equipment life.

Common problem areas

- Couplings.
- Hoses.
- Tubes.
- Fittings.
- Pipe joints.
- Quick disconnects.
- Condensate traps.
- Valves.
- Flanges.
- Packings.
- Thread sealants.
- Point-of-use devices.

Let's get started. Find a list of trade allies at entergyarkansas.com/commercial, or contact our Energy Efficiency Solutions Center at 877-212-2420.

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Stop leaking money

How it works

1. Discover. You or a participating trade ally identifies, tags and labels all compressed air leaks in your system. Compressed air leaks are easy to find with ultrasonic acoustic detectors, which can recognize the high-frequency hissing associated with air leaks.
2. Verify. An Entergy Arkansas representative measures and verifies each leak.
3. Repair. You or your trade ally repairs all leaks following internal safety protocols. Most leaks are simple and inexpensive to fix. Document the cost and labor of all leak repairs, or save a copy of the invoice if using an outside contractor.
4. Confirm. An Entergy Arkansas representative confirms all repairs and removes the tags. We can also provide preventative maintenance training upon request.



Typical cost savings

The following examples show the estimated savings for repairing air leaks totaling up to 20% of the system capacity of a typical compressed air system operating 5,000 hours per year at a specific power of 0.18 kW/cfm with an electricity rate of $0.06 per kWh.

Compressor (HP)	Est. capacity (ACFM)	Available incentives	Est. annual savings
200	1,000	Up to 100%	$10,800
150	750	Up to 100%	$8,100
100	500	Up to 100%	$5,400
50	250	Up to 100%	$2,700

Let's get started. Find a list of trade allies at entergyarkansas.com/commercial, or contact our Energy Efficiency Solutions Center at 877-212-2420.

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3.6.14 Chiller Replacement Fact Sheet C&I

Entergy Solutions
BY ENTERGY ARKANSAS



Chiller replacements

Replace your chiller for cool savings

Did you know that the annual energy cost of operating a chiller can be as much as one-third of its purchase price?* By joining one of the Entergy Arkansas energy efficiency programs, you can learn how much energy your chiller is wasting and how to improve its efficiency. We'll even provide cash incentives to help fund the project.

Benefits

- Lower monthly energy costs and use.
- Reduced upfront costs, thanks to Entergy Arkansas incentives that shorten the payback period on your investment.
- Improved efficiency of your chiller plant.
- Less chance of needing repairs in the future, which reduces interruptions and boosts productivity.

How to participate

1. Visit **entergyarkansas.com/commercial** or contact us at **877-212-2420** to enroll in one of the Entergy Arkansas energy efficiency programs.
2. We'll perform an on-site inspection of your existing chillers—at no cost to you.
3. You'll receive customized project recommendations, tailored to your company's needs.
4. We will provide a list of qualified participating trade allies who are trained in the Entergy Arkansas energy efficiency programs.
5. The system upgrades will be installed.
6. You'll receive cash incentives for all qualifying completed projects.

Chiller replacement facts

- For every degree the temperature of chilled water is raised, energy usage is decreased by 1–1.5%.**
- Water-cooled water plants are approximately twice as efficient as air-cooled equipment.***
- Air-cooled chillers larger than 100 tons should be replaced with water-cooled chillers and cooling towers.***



*Source: U.S. Environmental Protection Agency
**Source: Energy Management Handbook: 8th edition
***Source: U.S. Department of Energy

Ready to save? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.6.15 Small Air Compressors Flyer C&I

Entergy Solutions



Small air compressors

Upgrade your small system to save big

Compressed air, though very useful, is one of the most expensive sources of energy. By joining one of the Entergy Arkansas energy efficiency programs, you can find out how much energy your compressed air system is wasting and how to improve its overall efficiency. We'll even provide cash incentives to help make it all possible.

Benefits

- A quieter system that's more efficient, stable and reliable
- Reduced upfront costs, thanks to Entergy Arkansas incentives.
- Shortened payback period on your investment.

Who is eligible?

Small single-compressor systems up to 75 horsepower qualify.

How to participate

1. Contact us at **877-212-2420** or visit **entergyarkansas.com/commercial** to enroll in one of the Entergy Arkansas energy efficiency programs.
2. We'll perform an on-site inspection of your existing systems—at no cost to you.
3. You'll receive customized project recommendations, tailored to your company's needs.
4. We will provide a list of qualified participating trade allies who are trained in the Entergy Arkansas energy efficiency programs.
5. The system upgrades will be installed.
6. You'll receive cash incentives for all qualifying completed projects.

Compressor facts

- Only 25% of all compressors sold are 50–100 HP (and 65% are less than 50 HP).*
- A variable speed drive compressor saves approximately 26% more than a modulating compressor.**

*Source: Consortium for Energy Efficiency Inc.
**Source: Compressed Air & Gas Institute

Ready to save? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.6.16 C&I Boost Flyer

Entergy Solutions
BY ENTERGY ARKANSAS



Boost your earning power

Our Large Commercial & Industrial Program's tiered incentive structure rewards businesses for implementing multiple energy-saving projects. The more projects you complete, the bigger incentives you can earn.

Tier it up

For every qualifying and unique measure completed at your facility within the two-year program period, you'll move to a higher incentive tier—allowing you to earn even more.

Incentives are awarded based on kWh savings over your baseline annual usage. Each additional and unique measure must result in at least 30,000 kWh in annual savings to qualify.

Incentive tiers

$0.14	Tier 1
$0.15	Tier 2
$0.16	Tier 3
$0.18	Tier 4

Bonus incentives

If your project earns more in incentives than the incremental cost to implement it, you're allowed to apply that bonus to another energy efficiency measure completed within the next two-year program period up to the program incentive cap.

For example, if your project has a $50,000 implementation cost and earns $55,000 in incentives, you can apply that extra $5,000 to help cover the cost of a future qualifying project.

Go retro

Our tier system also works retroactively. That means, if you complete an additional project(s) within the same two-year program period, we'll apply the difference on any previously completed project within those two program years, up to a maximum of $0.18 per kWh reduced and the program incentive cap.

Learn more to earn more.

Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial to get started.

*The Entergy Arkansas Energy Efficiency Solutions program year is Jan. 1 through Dec. 31.

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3.6.17 Variable Speed Drive Flyer C&I

Entergy Solutions
BY ENTERGY ARKANSAS



Variable speed drives

Drive home savings for your business

Did you know that reducing a machine's fan speed by even 20% can reduce its electricity use by about 50%?*

By joining one of the Entergy Arkansas energy efficiency programs, you can receive incentives toward the installation of variable speed drives on HVAC systems, cooling tower fans, water pumps, air compressors, process equipment and more.

Benefits

- Receive cash incentives that offset your upfront costs.
- See monthly energy cost savings that you can re-invest in your business.
- Reduce your impact on the environment.

*Source: ENERGY STAR
**Source: U.S. Department of Energy

How it works

Installing VSDs on motors saves energy by utilizing the affinity laws. These laws show that a small decrease in the rotating speed of the motor can greatly reduce the power input needed and yield big savings.**

How to participate

1. Contact us at **877-212-2420** or visit **entergyarkansas.com/commercial** to enroll in one of the Entergy Arkansas energy efficiency programs.
2. We'll perform an on-site inspection of your existing systems at no cost to you.
3. You'll receive customized project recommendations, tailored to your facility's needs.
4. We will provide a list of qualified participating trade allies who are trained in the Entergy Arkansas energy efficiency programs.
5. The system upgrades will be installed.
6. You'll receive cash incentives for all qualifying completed projects.

Ready to save? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.6.18 C&I Mission Based Flyer

Entergy Solutions



Entergy Arkansas Mission-Based Offering

Many communities, nonprofits and businesses don't have extra funds to devote toward energy efficiency programs. Entergy Arkansas is focused on reducing barriers for mission-based organizations and delivering accessible energy-savings solutions for those who need it the most.

Impact areas include

- Special needs facilities
- Community food programs
- Local food pantries
- Shelters for people experiencing homelessness
- Disabled care centers
- Safehouses
- Foster care support offices

Connecting organizations with energy-efficient solutions

While energy efficiency may not always be top of mind, implementing energy-saving measures can help mission-based organizations save significant amounts of money—while also reducing demand on the grid.

How to participate

Our team of energy experts are ready to help you deliver accessible and equitable energy-savings solutions. Contact the Energy Efficiency Solutions Center at 877-212-2420 or email EntergyARLargeCommercial@clearesult.com.

For more information about our Large Commercial & Industrial Program, visit entergyarkansas.com/commercial.



Our methods

- A walk-through assessment of your facility's energy use and savings potential
- Access to our participating trade ally network
- Incentives to help cover your project costs
- Reduced energy costs
- Improved efficiency of your facility

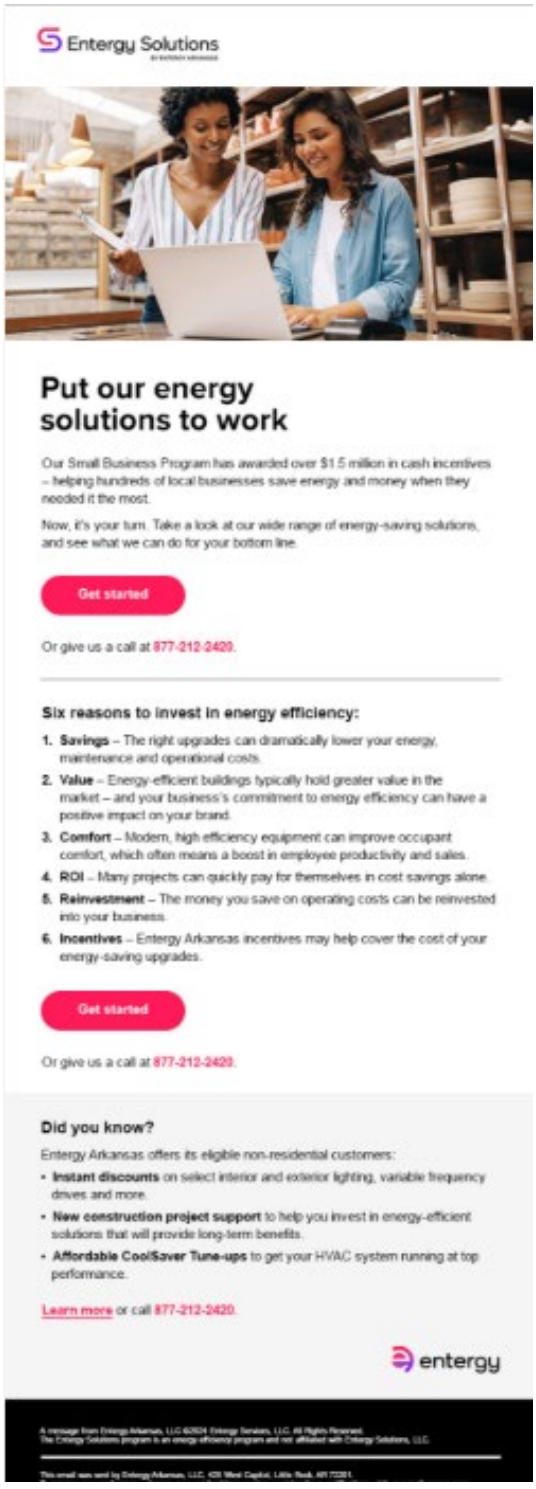
Scan to learn more

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3.6.19 Small Business Email C&I 2024



Entergy Solutions

Put our energy solutions to work

Our Small Business Program has awarded over $1.5 million in cash incentives – helping hundreds of local businesses save energy and money when they needed it the most.

Now, it's your turn. Take a look at our wide range of energy-saving solutions, and see what we can do for your bottom line.

Get started

Or give us a call at 877-212-2420.

Six reasons to invest in energy efficiency:

1. **Savings** – The right upgrades can dramatically lower your energy, maintenance and operational costs.
2. **Value** – Energy-efficient buildings typically hold greater value in the market – and your business's commitment to energy efficiency can have a positive impact on your brand.
3. **Comfort** – Modern, high efficiency equipment can improve occupant comfort, which often means a boost in employee productivity and sales.
4. **ROI** – Many projects can quickly pay for themselves in cost savings alone.
5. **Reinvestment** – The money you save on operating costs can be reinvested into your business.
6. **Incentives** – Entergy Arkansas incentives may help cover the cost of your energy-saving upgrades.

Get started

Or give us a call at 877-212-2420.

Did you know?

Entergy Arkansas offers its eligible non-residential customers:

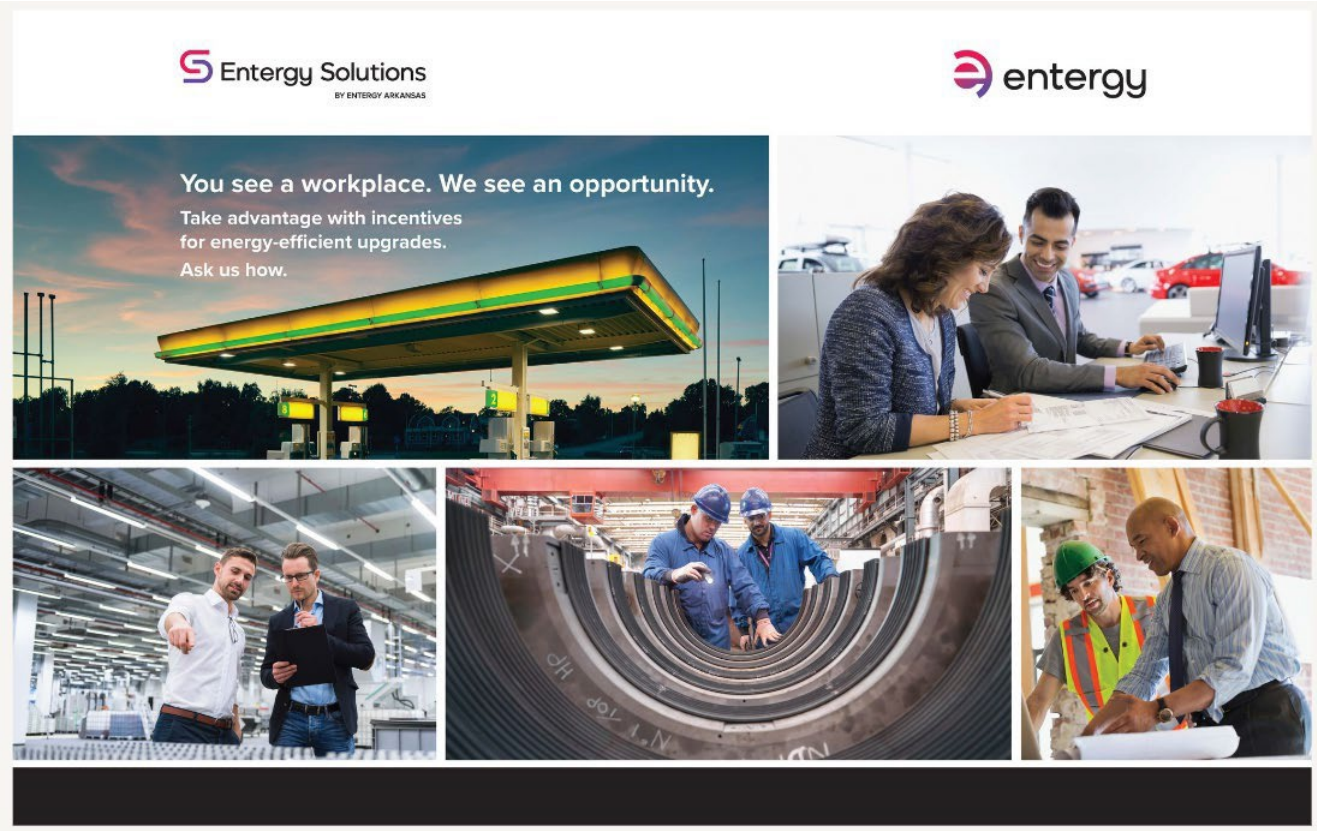
- **Instant discounts** on select interior and exterior lighting, variable frequency drives and more.
- **New construction project support** to help you invest in energy-efficient solutions that will provide long-term benefits.
- **Affordable CoolSaver Tune-ups** to get your HVAC system running at top performance.

Learn more or call 877-212-2420.

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3.6.20 Trade Ally Summit Backdrop



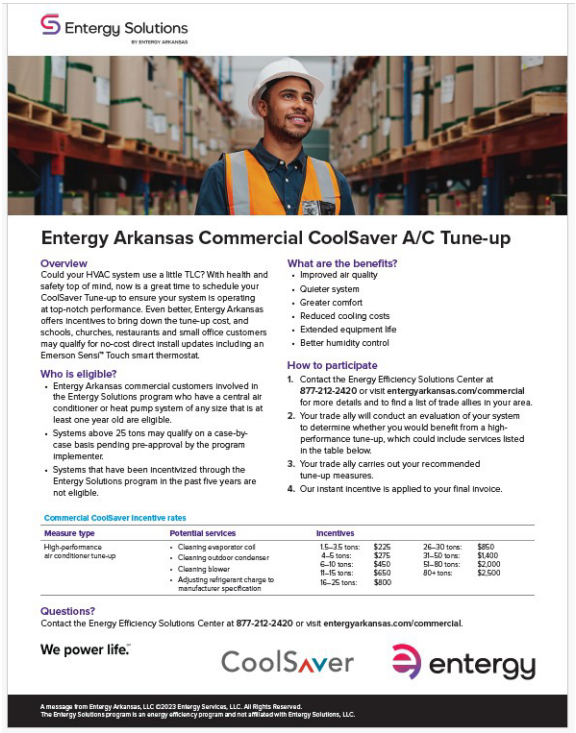
3.6.21 C&I Contractor Badges





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3.6.22 Coolsaver Fact Sheet



Entergy Solutions
BY ENTERGY ARKANSAS

Entergy Arkansas Commercial CoolSaver A/C Tune-up

Overview
Could your HVAC system use a little TLC? With health and safety top of mind, now is a great time to schedule your CoolSaver Tune-up to ensure your system is operating at top-notch performance. Even better, Entergy Arkansas offers incentives to bring down the tune-up cost, and schools, churches, restaurants and small office customers may qualify for no-cost direct install updates including an Emerson Sensi™ Touch smart thermostat.

Who is eligible?
- Entergy Arkansas commercial customers involved in the Entergy Solutions program who have a central air conditioner or heat pump system of any size that is at least one year old are eligible.
- Systems above 25 tons may qualify on a case-by-case basis pending pre-approval by the program implementer.
- Systems that have been incentivized through the Entergy Solutions program in the past five years are not eligible.

What are the benefits?
- Improved air quality
- Quieter system
- Greater comfort
- Reduced cooling costs
- Extended equipment life
- Better humidity control

How to participate
1. Contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/commercial** for more details and to find a list of trade allies in your area.
2. Your trade ally will conduct an evaluation of your system to determine whether you would benefit from a high-performance tune-up, which could include services listed in the table below.
3. Your trade ally carries out your recommended tune-up measures.
4. Our instant incentive is applied to your final invoice.

Commercial CoolSaver incentive rates

Measure type	Potential services	Incentives			
High-performance air conditioner tune-up	• Cleaning evaporator coil • Cleaning outdoor condenser • Cleaning blower • Adjusting refrigerant charge to manufacturer specification	1.5–3.5 tons: $225 4–5 tons: $275 6–10 tons: $450 11–15 tons: $650 16–25 tons: $800		26–30 tons: $850 31–50 tons: $1,400 51–80 tons: $2,000 80+ tons: $2,500	

Questions?
Contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/commercial**.

We power life.™

CoolSaver entergy

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Example CoolSaver A/C Tune-up report
Facilities with multiple units will find our CoolSaver A/C Tune-up report particularly beneficial. The report includes the number of tune-ups performed, estimated savings after one year and after five years, average cooling increase across units and average energy efficiency rating (EER) increase across units.

Summary of all activities

tune-ups performed	80

Performance breakdown

estimated kW savings	28.11
estimated kWh savings	47,259
estimated one-year savings	$4,370.90
estimated five-year savings	$18,567.60
average capacity increase (BTU)	5,588
average kW increase	1.04

Screening criteria

existing kWh threshold	9,000
existing percentage of rated cooling capacity	70%
$ per kWh	$0.10

Results

recommended action	quantity of units
Unit meets or exceeds minimum kWh and capacity after adjustments. Continue maintenance to maintain savings.	37
Unit does not meet one or both kWh or capacity criteria (depending on the age of the unit), consult presents or budget for replacement.	5
Unit does not meet either requirement for kWh or capacity, budget for replacement.	32

The CoolSaver A/C Tune-up report scores your units in terms of how closely they meet the recommended minimum criteria for SEER and cooling capacity, allowing you to accurately budget red units for replacement.
GREEN: Both criteria met
ORANGE: One of two criteria met
RED: Neither met

The CoolSaver A/C Tune-up report also provides specific information about each individual unit in your facility. The data generated for each unit includes the location, type, serial number, model, delivered SEER rating and an efficiency color score.

Account name	Service address	Project ID	Unit ID	Outdoor unit or compressor manufacturer	Outdoor unit or compressor model #	Outdoor unit or compressor serial #	Eval SEER	Eval cap vs. Rated	Score
XYZ Jt. High	4521 Outland Dr	FMA %230_2011_SK_16_1	RTU 21	Carrier	50HJ072A61	3119212611	14.4	112.08%	G
XYZ Jt. High	4521 Outland Dr	FMA %230_2011_SK_16_2	RTU 23	Carrier	50HJ072A61	4309212722	14.11	111%	Y
XYZ Jt. High	4521 Outland Dr	FMA %230_2011_SK_16_3	RTU 24	Carrier	50HJ036A61	4109212428	14.7	113.24%	Y

The CoolSaver difference
CoolSaver's state-of-the-art diagnostic tools and procedures go far beyond a typical tune-up. In addition to lowering your facility's energy and maintenance costs, a CoolSaver A/C Tune-up is carefully designed to provide a cooler, more comfortable and more productive work environment.

Questions?
Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.6.23 Large C&I Commercial POPS Participation Agreement



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Commercial Point Of Purchase Solutions Energy Efficiency Program Participation Agreement

Save real money with high efficiency equipment.

The Entergy Arkansas Commercial Point of Purchase Solutions Energy Efficiency Program offers incentives at the time of purchase for specific high efficiency equipment. Entergy Arkansas commercial customers can obtain the products through their standard purchasing methods, and incentives are processed through the equipment supplier.

How will I benefit?

- Savings, now and later. Equipment upgrades typically pay for themselves in energy savings alone within a few years, and you can also save immediately through incentives for purchasing select high efficiency products.
- Simplified process. The incentives are processed through your equipment supplier so you get immediate benefits and the supplier handles the paperwork.
- Entergy Arkansas commercial customers can obtain discounted high efficiency products through standard purchasing methods.

Frequently asked questions

1. **Are there any commercial customers that aren't eligible for participation in the program?**

   Any nonresidential Entergy Arkansas customer is eligible to receive discounts through the program, even if you've completed a commercial project for which you received Entergy Arkansas incentives, though incentives cannot be claimed for the same socket or fixture twice.

2. **Do all efficient products qualify for discounts through the program?**

   No, only certain categories of lighting, hand dryers, small air compressors and variable-frequency drives of a certain size are eligible for discounts through the program.

How to Participate:

1. Sign the back of this form and submit it to your product supplier. This enrolls you in the program and authorizes us to process the incentives for your purchase.
2. Purchase qualified products from your supplier. The incentive amount will be automatically deducted from the purchase price.
3. Install your product within 30 days of the purchase date. One of our program representatives may contact you to verify installation.
4. Enjoy the benefits of your completed project.

Commercial Point Of Purchase Solutions Energy Efficiency Program

Customer Participation Agreement

Entergy Arkansas has contracted with CLEAResult to implement, promote and administer the Commercial Point of Purchase Solutions Energy Efficiency Program (herein referred to as "program"). _____ (herein referred to as "participant") recognizes it is a willing participant of this program and is an Entergy Arkansas commercial customer. This participation agreement reflects the voluntary collaboration between your organization and the Entergy Arkansas-sponsored Commercial Point of Purchase Solutions Energy Efficiency Program. The terms below list the general commitments of the participant in order to improve the energy efficiency of your organization.

To participate in this program, you will need to understand and agree to these terms:

1. The program will provide incentive funds (in the form of a direct discount from the participating supplier) for eligible energy-saving products to be installed by the participant within facilities served by Entergy Arkansas. Installation address must be provided.
2. Participant will promptly install all energy-saving products purchased for their facilities within 30 days of the purchase date of the energy-saving products. Repayment of incentivas received may be requested for any products found not installed upon inspection 30 days following purchase.

   ☐ Please initial.
3. Participant will allow necessary post-inspections to be administered by the program for verification of installation of the energy-saving products and arrange for any necessary inspection/participant surveys to be administered by the program evaluator of record.
4. Participant acknowledges that, as part of its participation in this program, it will maintain eligibility to receive program services and incentives for a period of two years from the date the participant receives the discount for the purchase of energy-saving products installed at its organization.
5. If the individual signing this form is NOT the account holder, the signer acknowledges that he/she is authorized to make purchasing decisions on the account holder's behalf. All terms and conditions in this agreement apply regardless of who signs the agreement.

Disclaimer

The purchasing of eligible energy-saving products from a participating supplier is the sole decision of the participant. The inclusion of a participating supplier for the program does not constitute an endorsement by Entergy Arkansas or CLEAResult of any product, individual or company. Eligible energy-saving products purchased by the participant from a participating supplier are not guaranteed or subject to any representation or warranty, either expressed or implied or otherwise, by either Entergy Arkansas or CLEAResult. Neither Entergy Arkansas nor CLEAResult makes any guarantee or any other representation or warranty, expressed or implied or otherwise, as to the quality, cost or effectiveness of any energy-saving product(s) provided by any participating supplier, by any such participating supplier's employees or subcontractors. Energy efficiency gains are subject to a number of variable conditions and circumstances. While it is the intent of the program to achieve energy efficiencies at the participant's organization, neither Entergy Arkansas nor CLEAResult guarantees or warrants that any specific energy efficiency gains will be achieved for a particular customer under the program.

Customer Acknowledgment

I acknowledge that by signing below I understand and agree to the terms listed above. I understand that I will be liable to pay back the participating supplier some (or all) of the discounted amount received for the products purchased if I decide not to proceed with the installation of all purchased products. Incentives will not be paid for products that have also been incentivized through a different program, or if the socket or fixture being replaced was incentivized prior to proposed replacement. I agree to allow my account information and data to be used by the program staff for the purposes of verifying program eligibility and reporting program data to Entergy Arkansas. I acknowledge that I have read and understand the above disclaimer.

By endorsing below, your organization accepts this agreement with Entergy Arkansas. If your organization wishes to end its participation in the program, it may do so at any time by providing the program administrator written notice of its intentions, subject to product installation status and incentives received as outlined above.

Account Holder Point of Contact (First and Last Name): _____

☐ Check if you are NOT the account holder, and see #5 above.

Account Holder Company Name: _____

Installation Location Address, City, State, ZIP: _____

Telephone: _____ **Email:** _____

SIGNATURE: _____ **DATE:** _____

Please fill in completely, sign and hand this form to your product supplier.

Questions? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarcommercialdiscounts.com.

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3.6.24 -EA-C&I- Lighting Incentives Flyer



Commercial Lighting Incentives

Save big with energy-efficient lighting.

The Entergy Arkansas Commercial Point of Purchase Solutions Program offers incentives at the time of purchase for specific high efficiency lighting equipment. Entergy Arkansas commercial customers can obtain the products through their normal purchasing methods, and incentives are processed through the lighting equipment supplier.

How to participate:

1. Find participating lighting product suppliers at entergyarcommercialdiscounts.com.
2. You'll need to sign a participation agreement, which your lighting supplier can provide. Signing the agreement enrolls you in the program and authorizes Entergy Arkansas to process the incentives for your purchase.
3. Purchase qualified lighting products from your supplier. The incentive amount will be deducted automatically from the purchase price.
4. Install your lighting product within 30 days of the purchase date. One of our program representatives may contact you to verify installation.
5. Enjoy your lower energy costs.

With participating suppliers across the state, it's easier than ever to give your lighting an efficiency upgrade. Visit entergyarcommercialdiscounts.com to find the participating lighting supplier nearest to you.



Light up savings in your facility.

Did you know that lighting consumes 35% of a building's electricity? That's more than any other use.* Upgrading your lighting can mean years of energy savings—and Entergy Arkansas customers can save even more on high efficiency lighting products that use less energy and generate less heat.

*SOURCE: ENERGY STAR®

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Commercial Point of Purchase Solutions Incentive Amounts (per unit)

Lamps	
ENERGY STAR PAR38	$8
ENERGY STAR BR30	$3
ENERGY STAR PAR30	$5
ENERGY STAR A Lamps (250-1490 lumens)	$1
ENERGY STAR A Lamps (>1491 lumens)	$3
ENERGY STAR Globe	$3
ENERGY STAR Candle/Decorative	$4
ENERGY STAR Downlight Retrofit	$6
ENERGY STAR or DLC LED Linear Lamp, 2 ft (800-2000 lumens)	$2
ENERGY STAR or DLC LED Linear Lamp, 4 ft (5200-7599 lumens)	$2
ENERGY STAR or DLC LED Linear Lamp, 8 ft (7800-12999 lumens)	$6
DLC LED TL (2200-6000 lumens)	$3
DLC 4 Pin LED (6000-25000 lumens)	$3

Fixtures	
DLC Troffer/Linear Ambient (1500-2499 lumens)	$10
DLC Troffer/Linear Ambient (2500-5999 lumens)	$20
DLC Troffer/Linear Ambient (6000-10000 lumens)	$25
DLC Lowbay LED Fixtures (3000-7499 lumens)	$35
DLC Lowbay LED Fixtures (7500-11999 lumens)	$45
DLC Highbay LED Fixtures (12000-24999 lumens)	$55
DLC Highbay LED Fixtures (25000-40000 lumens)	$75
DLC LED Exterior (1000-4999 lumens)	$20
DLC LED Exterior (5000-8999 lumens)	$55
DLC LED Exterior (9000-19999 lumens)	$65
DLC LED Exterior (20000-54999 lumens)	$115
DLC LED Parking Garage (2000-5499 lumens)	$20
DLC LED Parking Garage (5500-7499 lumens)	$75
DLC LED Parking Garage (7500-12000 lumens)	$85

All items listed above must be DLC or ENERGY STAR certified.

LED Troffers – includes troffer luminaires, integrated and linear-style retrofit kits.

LED Lowbay/Highbay – includes lowbay/highbay luminaires, retrofit kits and HID replacement lamps.

LED Parking Garage – includes parking garage luminaires, retrofit kits and HID replacement lamps.

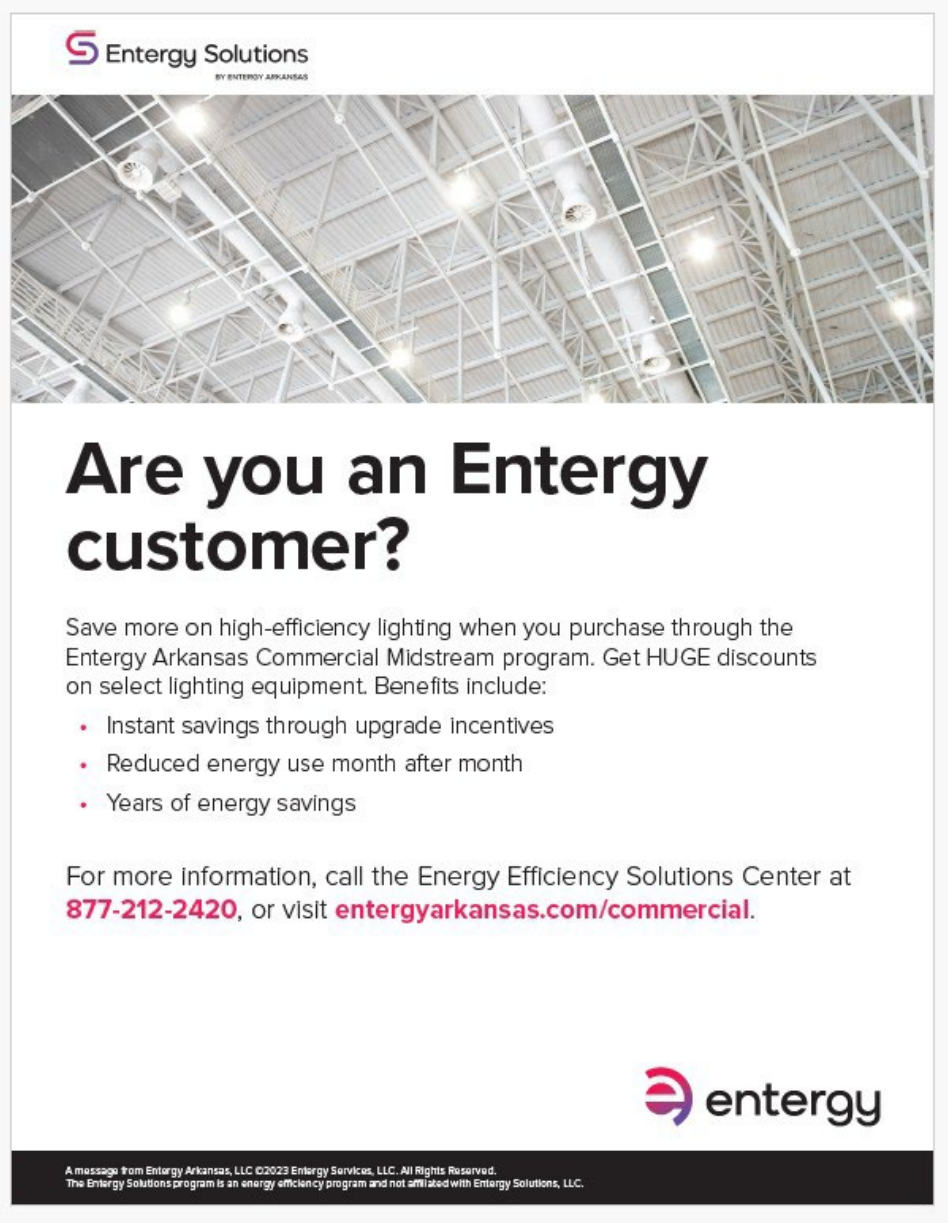
LED Exterior – includes the following luminaires:
- *Outdoor pole/arm-mounted area, roadway and decorative luminaires.*
- *Outdoor full-cutoff wall-mounted area luminaires.*
- *Outdoor non-cutoff and semi-cutoff wall-mounted area luminaires.*
- *Fuel pump canopy luminaires.*
- *Landscape/accent flood and spot luminaires.*
- *Architectural flood and spot luminaires.*

→ **Questions?** Contact the Energy Efficiency Solutions Center at 877-212-2420 or entergyarcommercialdiscounts.com.

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3.6.25 Midstream Counter Display



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3.6.26 Business Solutions Participation Agreement



Business Solutions programs participation agreement

Entergy Solutions

Take control of your energy use.

Entergy Arkansas is proud to offer our commercial customers a suite of programs designed to help your organization save energy and lower costs. From big projects to small, we'll provide financial incentives, resources and expertise to help you achieve meaningful, long-term savings. The Large Commercial & Industrial program and the Small Business program are for commercial customers, and the CitySmart™/SCORE program is designed to improve public sector educational and municipal facilities.

Steps to participate:

1. Sign and submit this participation agreement to enroll. Please also submit a W-9 form as part of incentive payment requirements.
2. Work with the program administrator to determine which specific program your organization is eligible for and to discuss energy efficiency project opportunities.
3. Schedule your pre-installation inspection in order to allow the program administrator to quantify prospective energy savings.
4. Sign and submit a project application to define projects to be completed and to reserveincentive funds.
5. Complete projects defined in the project application, notify program administrator and schedule post-inspection as required.
6. Receive incentive dollars from Entergy Arkansas, and benefit from energy savings.
7. After completing the project and receiving incentives, you may be contacted by an independent evaluator to verify information gathered by the program and/or to review on-site equipment installation.

Organization: _____ Title: _____

First name: _____ Last name: _____

Project site address, city, state, ZIP: _____

Primary contact's address, city, state, ZIP: _____

Telephone: _____ Email: _____

Account number:* _____ Tax ID: _____

*If more than one account number, please provide a separate list of buildings, physical addresses and account numbers.

Questions? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com.

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Entergy Solutions

Standard terms and conditions for participating customers

These Standard Terms and Conditions for Participating Customers and the Customer Participation Agreement (collectively, the "Agreement") are made and entered into by and between CLEAResult Consulting Inc., a Texas corporation and/or an affiliate thereof ("CLEAResult"), and Customer for the purpose of evaluating and installing energy-efficient measures ("EEM") under the Program funded by Sponsor. CLEAResult and Customer may be referred to in this Agreement individually as a "Party" and collectively as the "Parties." The Parties acknowledge and agree that the state regulatory governing body (the "PUC"), Sponsor and Contractor are third-party beneficiaries of this Agreement. In consideration of the mutual covenants and agreements set forth below, the adequacy and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. **ACCESS AND PARTICIPATION.** Customer agrees to support CLEAResult and Contractor and assign a representative to facilitate services provided under this Agreement. Customer acknowledges its intent to install EEM using Program incentives. Customer agrees to allow CLEAResult and Contractor to access its facilities, energy use and cost information for the purposes of implementing this Agreement. If a Customer is a tenant, Customer represents that, by signing this document, they have obtained the property owner's permission to install EEM under this Agreement.Customer agrees not to use the name or identifying characteristics of Sponsor or its contractors for any advertising sales promotion, or other publicity of any kind. Customer also confirms that it has not received and will not receive rebates, incentives or services for any measures installed under this Program from another program funded by Sponsor. The Program may be modified or terminated without prior notice, and this Agreement is subject to modifications by Sponsor.
2. **ELIGIBILITY.** Sponsor determines eligibility of Customers at its sole discretion. CLEAResult may request verification of eligibility requirements at any time during the Program period. Customer agrees to install all EEM provided by CLEAResult under this Program — provided, however, that if Customer does not install all EEM, then it shall return any uninstalled EEM to CLEAResult.
3. **INCENTIVE PAYMENT.** Customer acknowledges that incentives will be paid by Sponsor only if: (a) Customer(s) and installed measure(s) or services meet the Program eligibility requirements and the requirements outlined by the Program; (b) Measures are installed in eligible project sites; and (c) Measures are installed at a project site that has not received incentives from any other of Sponsor's energy efficiency programs for the same measure(s). Customer understands that Sponsor, in its sole discretion, may withhold incentive payments committed to Customer if a project site is proven ineligible or a project otherwise does not comply with the requirements set forth by the Program. Customer acknowledges that the incentive amount may not exceed the cost of the EEM.
4. **AUDITING, MONITORING AND VERIFICATION.** Customer also agrees to allow CLEAResult, Contractor, Sponsor and the PUC to access its facilities for the purpose of confirming Customer's participation in the Program, inspecting installed EEM and verifying the energy savings achieved through the Program. Customer agrees to cooperate with CLEAResult, Contractor, Sponsor and the PUC, as necessary. Customer also agrees to remedy any issue arising from auditing and monitoring results at no additional cost within the timeframe provided by the Program. Customer understands that any incentives may be withheld if Customer refuses to participate in any required verification within a reasonable period. Customer verifies that all EEM is installed in accordance with all applicable federal, state and local laws and manufacturer's specifications.
5. **CONFIDENTIALITY.** CLEAResult shall keep Customer information confidential. Only Contractor, Sponsor and the PUC shall be granted access to Customer data as needed or required. CLEAResult will not use the name or identifying characteristics of Customer in advertising sales promotion or other publicity without Customer's written approval.
6. **WARRANTY.** CLEARESULT, SPONSOR AND THE PUC MAKE NO REPRESENTATIONS OR WARRANTIES, AND ASSUME NO LIABILITY WITH RESPECT TO QUALITY, SAFETY, PERFORMANCE OR OTHER ASPECT OF ANY EEM INSTALLED PURSUANT TO THIS AGREEMENT AND EXPRESSLY DISCLAIM ANY SUCH REPRESENTATION, WARRANTY OR LIABILITY, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED TO CREATE ANY DUTY TO, ANY STANDARD OF CARE WITH REFERENCE TO OR ANY LIABILITY TO ANY THIRD PARTY. NEITHER THE PUC, SPONSOR, NOR CLEARESULT SHALL BE RESPONSIBLE FOR COSTS OR CORRECTIONS OF CONDITIONS ALREADY EXISTING IN THE FACILITIES INSPECTED WHICH FAIL TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS.
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8. **MISCELLANEOUS.** This Agreement shall be governed by and construed under the laws of the State of Arkansas, without regard to conflict of law rules. The parties agree that all actions, disputes, claims and controversies arising out of or relating to this Agreement or the work performed hereunder will be subject to binding arbitration administered in the county where the Customer is located by the American Arbitration Association under its Commercial Arbitration Rules or the Arkansas Claims Commission, as applicable, and judgment on the award may be entered in any court having jurisdiction. Customer shall not assign, delegate or subcontract this Agreement or its duties (hereunder, in whole or in part, voluntarily or involuntarily (including a transfer to a receiver or bankruptcy estate) without the prior written permission of CLEAResult. CLEAResult may assign its rights and delegate its duties under this Agreement to any third party at any time without Customer's consent. If any provision of this Agreement is invalid or unenforceable in any jurisdiction, the other provisions in this Agreement shall remain in full force and effect in such jurisdiction and shall be liberally construed in order to effectuate the purposes and intent of this Agreement. The invalidity or unenforceability of any provision of this Agreement in any jurisdiction shall not affect the validity or enforceability of any such provision in any other jurisdiction. The failure of either Party to enforce strict performance by the other of any provision of this Agreement, or to exercise any right available to the Party under this Agreement, shall not be construed as a waiver of such Party's right to enforce strict performance in the same or any other instance. Sections 7 and 8 through 7 shall survive the term of this Agreement.

This agreement should be signed by your organization's director, president or similar executive and will remain valid until the program implementor is provided with written notice of your organization's intent to end participation.

SIGNATURE: _____ DATE: _____

Please sign and email to the appropriate contact below.
If electronic submission is unavailable, please fax to 866-420-4450.

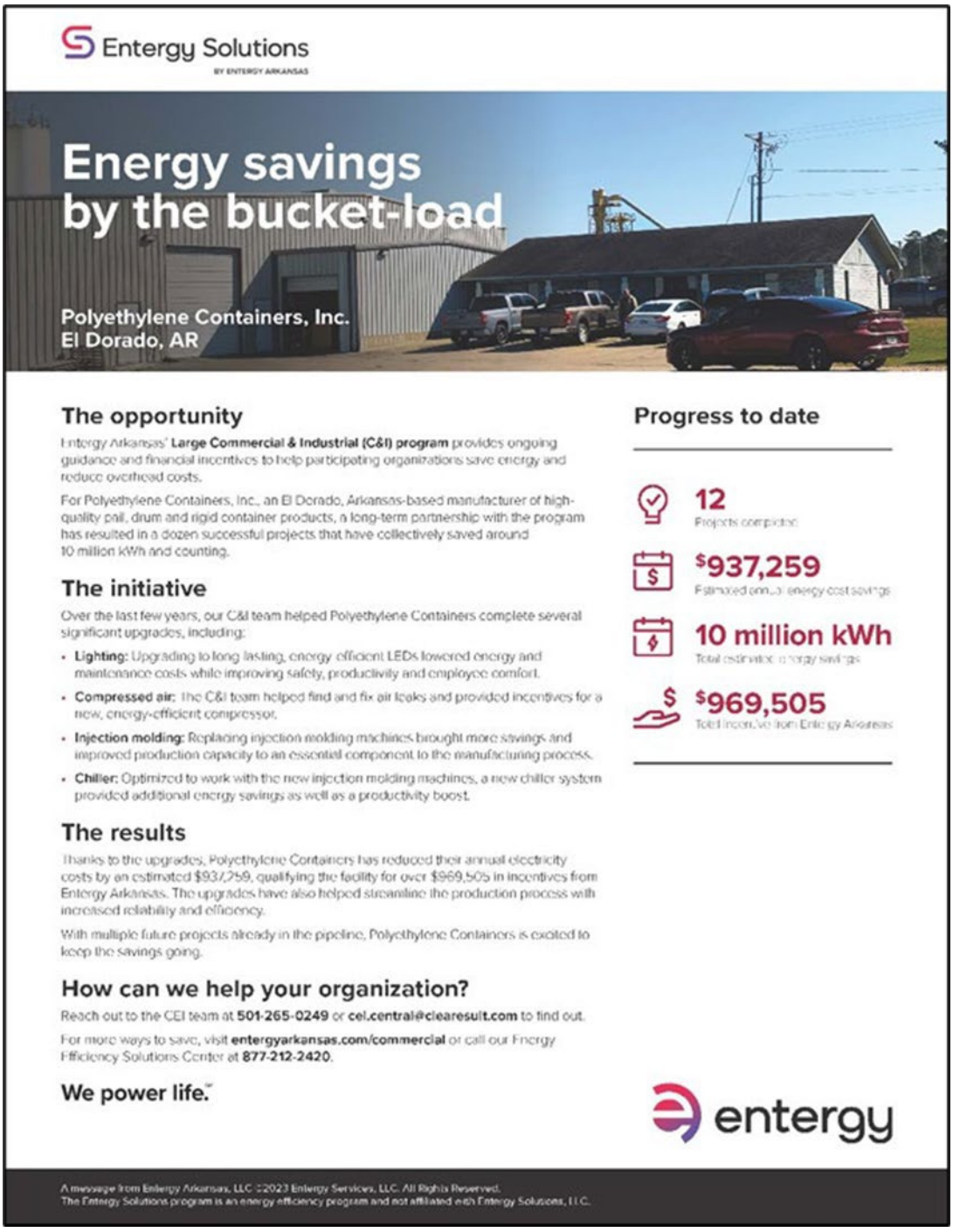
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tasupport@clearesult.com
501-221-4021

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3.6.27 Large C&I Case Study Polyethylene Containers



Entergy Solutions
BY ENTERGY ARKANSAS

Energy savings by the bucket-load

Polyethylene Containers, Inc.
El Dorado, AR

The opportunity

Entergy Arkansas' **Large Commercial & Industrial (C&I) program** provides ongoing guidance and financial incentives to help participating organizations save energy and reduce overhead costs.

For Polyethylene Containers, Inc., an El Dorado, Arkansas-based manufacturer of high-quality pail, drum and rigid container products, a long-term partnership with the program has resulted in a dozen successful projects that have collectively saved around 10 million kWh and counting.

The initiative

Over the last few years, our C&I team helped Polyethylene Containers complete several significant upgrades, including:

- **Lighting:** Upgrading to long-lasting, energy efficient LEDs lowered energy and maintenance costs while improving safety, productivity and employee comfort.
- **Compressed air:** The C&I team helped find and fix air leaks and provided incentives for a new, energy-efficient compressor.
- **Injection molding:** Replacing injection molding machines brought more savings and improved production capacity to an essential component to the manufacturing process.
- **Chiller:** Optimized to work with the new injection molding machines, a new chiller system provided additional energy savings as well as a productivity boost.

The results

Thanks to the upgrades, Polyethylene Containers has reduced their annual electricity costs by an estimated $937,259, qualifying the facility for over $969,505 in incentives from Entergy Arkansas. The upgrades have also helped streamline the production process with increased reliability and efficiency.

With multiple future projects already in the pipeline, Polyethylene Containers is excited to keep the savings going.

How can we help your organization?

Reach out to the CEI team at **501-265-0249** or **cei.central@clearesult.com** to find out.

For more ways to save, visit **entergyarkansas.com/commercial** or call our Energy Efficiency Solutions Center at **877-212-2420**.

We power life.™

Progress to date

12
Projects completed

$937,259
Estimated annual energy cost savings

10 million kWh
Total estimated energy savings

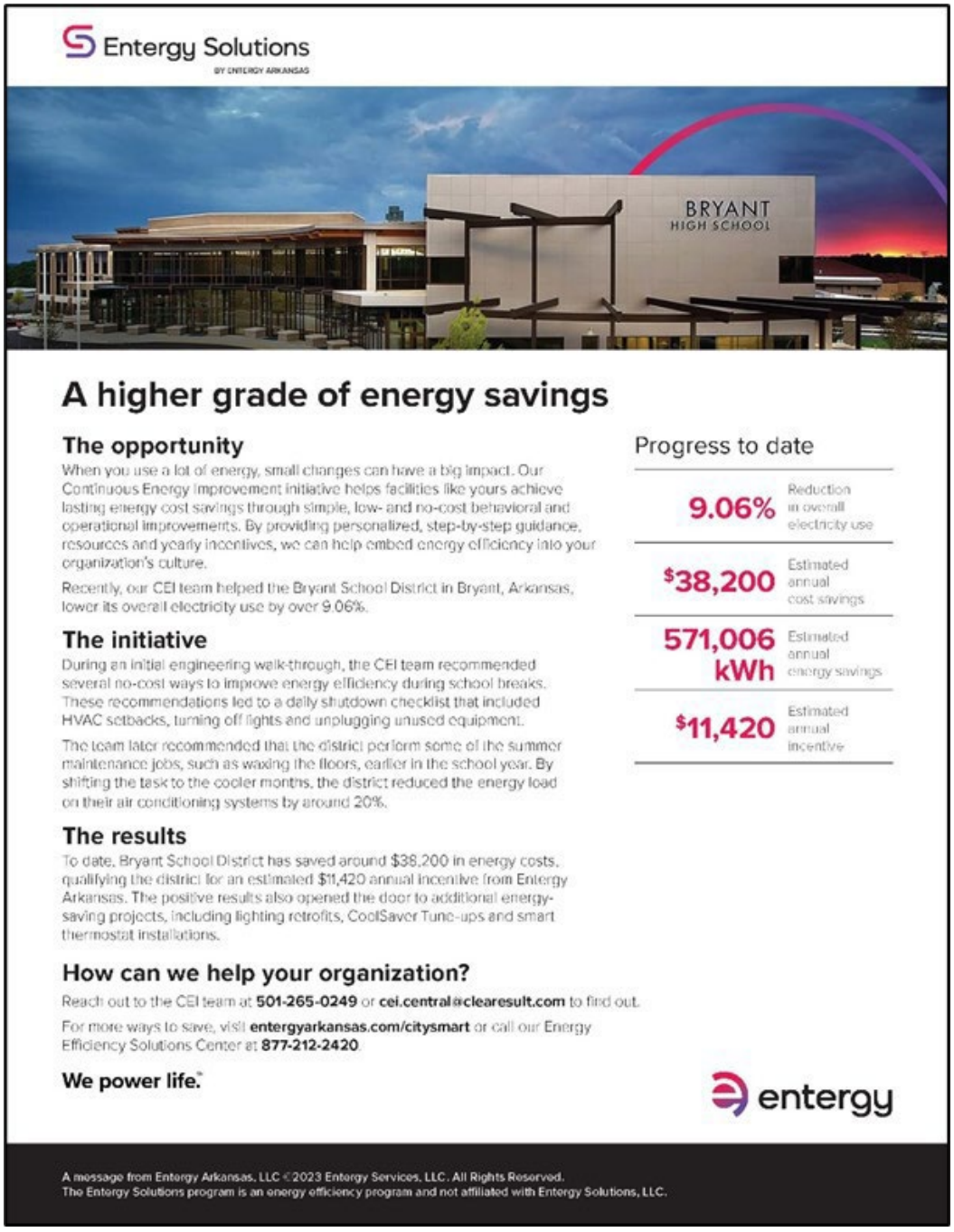
$969,505
Total incentive from Entergy Arkansas

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3.6.28 Large C&I Case Study Bryant High School



Entergy Solutions
BY ENTERGY ARKANSAS

A higher grade of energy savings

The opportunity

When you use a lot of energy, small changes can have a big impact. Our Continuous Energy Improvement initiative helps facilities like yours achieve lasting energy cost savings through simple, low- and no-cost behavioral and operational improvements. By providing personalized, step-by-step guidance, resources and yearly incentives, we can help embed energy efficiency into your organization's culture.

Recently, our CEI team helped the Bryant School District in Bryant, Arkansas, lower its overall electricity use by over 9.06%.

The initiative

During an initial engineering walk-through, the CEI team recommended several no-cost ways to improve energy efficiency during school breaks. These recommendations led to a daily shutdown checklist that included HVAC setbacks, turning off lights and unplugging unused equipment.

The team later recommended that the district perform some of the summer maintenance jobs, such as waxing the floors, earlier in the school year. By shifting the task to the cooler months, the district reduced the energy load on their air conditioning systems by around 20%.

The results

To date, Bryant School District has saved around $38,200 in energy costs, qualifying the district for an estimated $11,420 annual incentive from Entergy Arkansas. The positive results also opened the door to additional energy-saving projects, including lighting retrofits, CoolSaver Tune-ups and smart thermostat installations.

Progress to date

9.06%	Reduction in overall electricity use
$38,200	Estimated annual cost savings
571,006 kWh	Estimated annual energy savings
$11,420	Estimated annual incentive

How can we help your organization?

Reach out to the CEI team at **501-265-0249** or **cei.central@clearesult.com** to find out.

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3.6.29 Large C&I Case Study Georg Fischer Harvel

Entergy Solutions



Georg Fischer Harvel

The opportunity

Entergy Arkansas' Continuous Energy Improvement (CEI) initiative helps select facilities achieve lasting energy cost savings through simple low- and no-cost improvements. Focusing on behavioral and operational changes, our CEI team offers personalized, step-by-step guidance, resources and processing of incentives paid by Entergy Arkansas to embed energy efficiency into your organization's culture. For Georg Fischer Harvel, a global piping manufacturer with a large facility in Little Rock, the goals of CEI aligned perfectly with the company's long-term commitment to sustainability.

The initiative

During an initial walk-through assessment of Georg Fischer Harvel's Little Rock facility, the Entergy Arkansas CEI team recommended several low- and no-cost energy efficiency improvements.

Completed improvements included:

- **Using leaf blowers** instead of compressed air to blow away dust and debris.
- **Sealing compressed air leaks** to reduce energy waste and improve efficiency.
- **Optimizing new products** for long-term reliability, limited waste and maximum throughput.
- **Installing** motion sensors for office lighting.
- **Upgrading to LED fixtures** to improve efficiency, light quality and safety.
- **Turning off extrusion grinders** at night to save energy and extend equipment life.
- **Scheduling machines** to run according to production needs and not idle excessively.

Progress to date

7.76%
Reduction in overall electricity use

$62,686
Estimated annual cost savings

937,012 kWh
Estimated annual energy savings

$18,740
Estimated annual incentive

"This has been an important catalyst to help Georg Fischer Harvel exceed our corporate sustainability targets. We look forward to our continued partnership with Entergy Arkansas."

–[redacted], energy champion
georg fischer harvel

The results

Thanks to their improvements, the facility has reduced its overall electricity use by **7.76%**, resulting in around **$62,686** in savings on annual utility costs and **$18,740** worth of incentives from Entergy Arkansas.

Questions?

Reach out to the CEI team at **501-265-0249** or **cei.centralgeclearesult.com**. For all the ways we can help your business save, visit **entergyarkansas.com/commercial** or call our Energy Efficiency Solutions Center at **877-212-2420**.

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3.6.30 Large C&I Case Study 3M

Entergy Solutions



3M Little Rock

The opportunity

Entergy Arkansas' Continuous Energy Improvement (CEI) initiative helps select facilities achieve lasting energy cost savings through simple low- and no-cost improvements. Focusing on behavioral and operational changes, our CEI team offers personalized, step-by-step guidance, resources and yearly incentives to embed energy efficiency into your organization's culture. For large commercial and industrial facilities like 3M Company's plant in Little Rock, those energy-saving enhancements can also lead to significant improvements in productivity, employee comfort and, ultimately, your bottom line.

The initiative

The 3M Little Rock plant manufactures colored and specialty roofing granules for the asphalt shingle industry. After an initial walk-through with maintenance staff, the Entergy Arkansas CEI team helped identify, prioritize and implement a series of no-cost, energy-saving improvements.

Completed improvements included:

- **Production schedule changes** reduced the need for frequent cleanings, leading to dramatic improvements in energy efficiency and productivity.
- **Bag house timing adjustments** increased the intervals between bag cleanings, saving energy from the air compressor system while reducing wear and tear on equipment and filters.
- **Consolidating partially loaded equipment,** like refrigerators and air conditioners, reduced unnecessary energy waste.
- **Optimizing exterior lighting timing** saves energy during the day and extends the life of the lights.
- **Shutting down idling conveyors** during lunch and other periods of inactivity saved energy, extended the life of the conveyor motors and increased safety.
- **Sealing compressed air leaks** reduced energy waste and improved the efficiency of the air compressor system.

As items were completed throughout the year, new opportunities were identified and added to the list for an ongoing energy-saving strategy.

Project at a glance

8.27%
Reduction in overall electricity use

$119,334
Estimated annual cost savings

1,783,767 kWh
Estimated annual energy savings

$35,675
Estimated annual incentive

> "At 3M Little Rock, we are identifying the baseline of our process, putting behind old cultural ways and changing with today's standards."
>
> –[redacted]
> electrical systems engineer, 3M

The results

All told, the improvements have reduced the facility's overall electricity use by an incredible **8.27%**—saving an estimated **$119,334** a year in energy costs. In addition to the cost savings, the facility is set to earn an estimated **$35,675** a year in Entergy Arkansas incentives.

Questions?

Reach out to the CEI team at **501-265-0249** or **cei.centralgoldresult.com**. For all the ways we can help your business save, visit **entergyarkansas.com/commercial** or call our Energy Efficiency Solutions Center at **877-212-2420**.

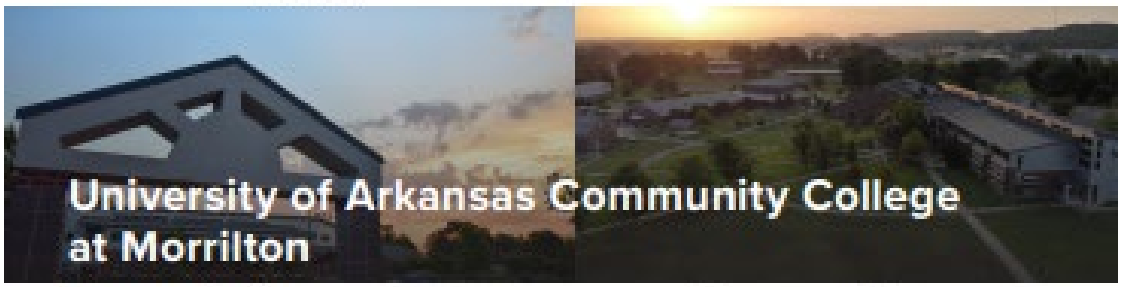
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3.6.31 Large C&I Case Study UACC Morrilton

Entergy Solutions



University of Arkansas Community College at Morrilton

The opportunity

Entergy Arkansas' Continuous Energy Improvement (CEI) initiative helps qualified facilities achieve lasting energy cost savings through simple, low- and no-cost improvements. Focusing on behavioral and operational changes, our CEI team offers personalized, step-by-step guidance, resources and yearly incentives to embed energy efficiency into your organization's culture. Available to schools, governments and municipalities through our CitySmart Program, CEI recently helped the University of Arkansas Community College at Morrilton lower their overall electricity use by 9.89%.

The initiative

Starting with an engineering walk-through of the school's facilities, the CEI team identified several no-cost actions the school staff could take to save energy when the facilities were less occupied.

Ongoing improvements include:

- **Adjusting HVAC schedules** to increase building setpoints on nights and weekends when buildings were unoccupied.
- **Implementing a shutdown checklist** for staff to use when closing buildings for the evenings and weekends.
- **Organizing staff walk-throughs** before long holiday breaks to ensure equipment is turned off and/or unplugged.

The results

The 16 participating facilities saw their electricity use drop by an average of **9.89%**, with some individual facilities saving **as much as 26%**. In financial terms, the improvements are saving UACCM an annual **$14,353** in energy costs and earning them another **$3,377 a year** in incentives from Entergy Arkansas.

Progress to date

9.89%
Reduction in overall electricity use

$14,353
Estimated annual cost savings

168,859 kWh
Estimated annual energy savings

$3,377
Estimated annual incentive

"I'm excited to see the campus embrace this effort. Not only is it the right thing to do, but it also allows us to use some of the money we have saved to do even more projects."

– Allen Holloway, Director of Facilities, UACCM

"We are very happy for UACCM for their commitment to energy improvement."

– Kenny Muhammad, Customer Service Manager, Entergy Arkansas

Questions?

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3.6.32 Large C&I Case Study Georgia-Pacific Crossett

Entergy Solutions



The opportunity

Georgia-Pacific Crossett is one of the world's leading makers of tissue, pulp, paper, packaging, building products and related chemicals and has been a vital part of the Arkansas community for over 100 years. In 2012, Entergy Arkansas began working with the Crossett facility to determine how energy efficiency could be improved on site, with a focus on lighting, compressed air, pumps and other large motors used in the manufacturing process.

The project

Working with the Large Commercial & Industrial Program team, Georgia-Pacific was able to secure funding for improvements, engineering support for recommended upgrades and technical guidance to improve its overall energy efficiency. Measures undertaken included a retrofit of its exterior lighting system, various pump upgrades and improving different processes throughout the facility to reduce energy usage.

Project at a glance

46,765,037
Annual kWh savings

5,343
Annual kW reduction

$1,870,601
Estimated annual savings

1.2 years
Payback period

The results

As a result of the upgrades, Georgia-Pacific improved the appearance, comfort and energy efficiency of its facility, resulting in savings of **46,765,037 kWh** and **$1,870,601**. Thanks to these energy cost savings and an incentive from Entergy Arkansas, the retrofit will pay for itself in just over one year. The energy savings are equivalent to the carbon sequestered by 13,824 acres of U.S. forests in one year.

Questions?

To learn more about how the Large Commercial & Industrial Program could help your business, contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/commercial**.

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3.6.33 Large C&I Case Study Molex

Entergy Solutions
BY ENTERGY ARKANSAS



Phillips-Medisize, a Molex company

The opportunity

Phillips-Medisize, a Molex company, is a global leader in front-end design, development and manufacturing solutions for industries such as pharma, in vitro diagnostics, med tech, consumer, automotive and defense. Since large companies like Molex use a lot of energy, even small changes can have a big impact.

Entergy Arkansas' Continuous Energy Improvement (CEI) initiative helps select facilities achieve lasting energy cost savings through simple low- and no-cost improvements. Focusing on behavioral and operational changes, our CEI team offers personalized, step-by-step guidance, resources and yearly incentives to embed energy efficiency into your organization's culture.

The initiative

Beginning in November 2018, the Entergy Arkansas CEI team has worked with the Molex team in Maumelle to identify, prioritize and implement a series of no-cost, energy-saving improvements.

Completed improvements included:

- **Installing occupancy sensors** in infrequently occupied areas, such as offices and storage rooms, to save energy around the clock.
- **Consolidating idling equipment** to reduce unnecessary energy waste.
- **Adjusting building temperature setpoints** to help match building occupancy and boost comfort and efficiency.
- **Repairing compressed air leaks** to reduce energy waste and improve the efficiency of the air compressor system.
- **Turning off exterior lighting during the day** to save energy and extend the life of lights.
- **Scheduling chilled water pump speeds** according to outside temperatures to optimize energy use and setting air dampers to adjust for seasonality.
- **Hosting employee engagement events** using Entergy Arkansas Energy Efficiency Kits to help employees learn how saving energy at home correlates to work.

Project at a glance

$1,000,000
Estimated total energy cost savings

15,000,000 kWh
Estimated annual energy savings

$302,750
Estimated incentive

"Working with the Entergy Solutions program has been an exciting and beneficial experience for myself personally and professionally. The CEI coaching, workshops and energy audits have all resulted in my company being more energy efficient and sustainable, while encouraging our employees to be more engaged."

–Leland Anderson,
site CEI Energy Champion

The results

Molex qualified for an estimated **$302,750** in total incentives from Entergy Arkansas. All told, the improvements have reduced the site's overall energy usage by **15 million kWh**—which equates to an estimated **$1,000,000 saved in energy costs**. These accomplishments will also allow Molex to pursue additional energy savings projects in the upcoming years.

Questions?

Reach out to the CEI team at **501-265-0249** or **cei.central@clearesult.com**.
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3.6.34 Large C&I Case Study Crain Automotive

Entergy Solutions



Crain Automotive

The opportunity

With 17 locations across Arkansas, the Crain Automotive team has enormous potential for energy savings. Like in most dealerships, bright and inviting lighting is essential to attracting business from the road and maintaining a safe and welcoming atmosphere. So Crain partnered with the Entergy Arkansas Large Commercial & Industrial Program to identify and secure generous incentives for energy-efficient lighting upgrades.

The project

Over four years, Entergy Arkansas has helped Crain plan, fund and complete interior and exterior LED lighting upgrades in seven of its dealership locations. They also teamed up to replace the HVAC system in their Little Rock office building. To help cover the cost of the projects, Entergy Arkansas provided Crain with nearly half a million dollars in incentives.

Project at a glance

3,108,781
Annual kWh savings

$310,908
Estimated annual savings

$459,774
Total project incentive

3.25 years
Payback period

The results

Altogether, the upgrades are expected to drive significant savings for years to come. Thanks to more than **$310,000** in estimated annual energy cost savings, Crain will see a return on their investment in just over three years. On top of the cost savings, the LED upgrades also have made the dealerships brighter, safer and more welcoming for customers and employees.

Questions?

Contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/commercial.**

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3.6.35 Large C&I Case Study Prime Line

Entergy Solutions



The opportunity

Prime-Line, a Malvern-based manufacturer of construction products, was looking to reduce heat, humidity and machinery emissions in its facility. With this in mind, the manufacturer decided to work with Entergy Arkansas to complete a ventilation upgrade project.

The project

Thermavent natural ventilation was installed to reduce internal building temperature without the use of a large HVAC system. Situated on the roof, the system allows excess heat from the product lines to flow naturally out of the facility through the open bay doors. That not only reduces interior heat and humidity, but also provides a manageable and comfortable working environment through all four seasons.

Project at a glance

495,267
Annual kWh savings

$88,590
Incentives paid

$34,770
Estimated annual savings

.85 years
Payback period

The results

The project is estimated to save Prime-Line **$34,770** annually in energy costs. The manufacturer received a total of **$88,590** in incentives from Entergy Arkansas, greatly offsetting the project cost and putting the payback period at only 0.85 years (or just over 10 months). It wasn't just financial savings that Prime-Line received. The manufacturer has saved **495,267 kWh** annually, which is equivalent to the greenhouse gas emissions from 834,185 miles driven by an average passenger vehicle or the CO^2 emissions from 36.8 homes' energy use for one year, according to U.S. Environmental Protection Agency calculations. The company is so pleased with these results it already has further projects planned, including new construction, a CoolSaver℠ A/C Tune-up and a compressed air installation.

Questions?

To learn more about the Large Commercial & Industrial Program, contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/commercial**.

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3.6.36 Large C&I Case Study Schulze & Burch Biscuit Co.

Entergy Solutions



The opportunity

While Schulze & Burch Biscuit Company has always been recognized as being a pioneer and innovator in baking technology, now it also will be known for its highly efficient facility and commitment to energy efficiency. When Director of Technical Services Alan Freeland was introduced to the Large Commercial & Industrial Program, he took a comprehensive approach to ensure every benefit of the program was realized.

The project

Schulze & Burch began working with program staff in 2012 to identify energy efficiency opportunities and available incentives, and decided to take a comprehensive approach. Freeland moved forward with upgrades to the facility's lighting, air compressor, high pressure low volume fans and building envelope. The initial project proved so successful, Schulze & Burch was able to reinvest the savings into additional improvements to the facility's lighting controls, interior and exterior lighting, and HVAC equipment.

Project at a glance

254.1
Total peak kW reduction

3,601,740
Total kWh reduction

$252,122
Estimated annual savings

$652,082
Total project incentive

1.29 years
Payback period

The results

Thanks to the massive reduction in energy costs and generous incentives from Entergy Arkansas, the projects more than paid off — and will keep doing so for years to come. Not only are the upgrades saving the company an extra **$252,122** every year, they also helped the Schulze & Burch facility become a brighter, safer, more comfortable and more productive place to work.

Questions?

To learn more about the Large Commercial & Industrial Program, contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/commercial**.

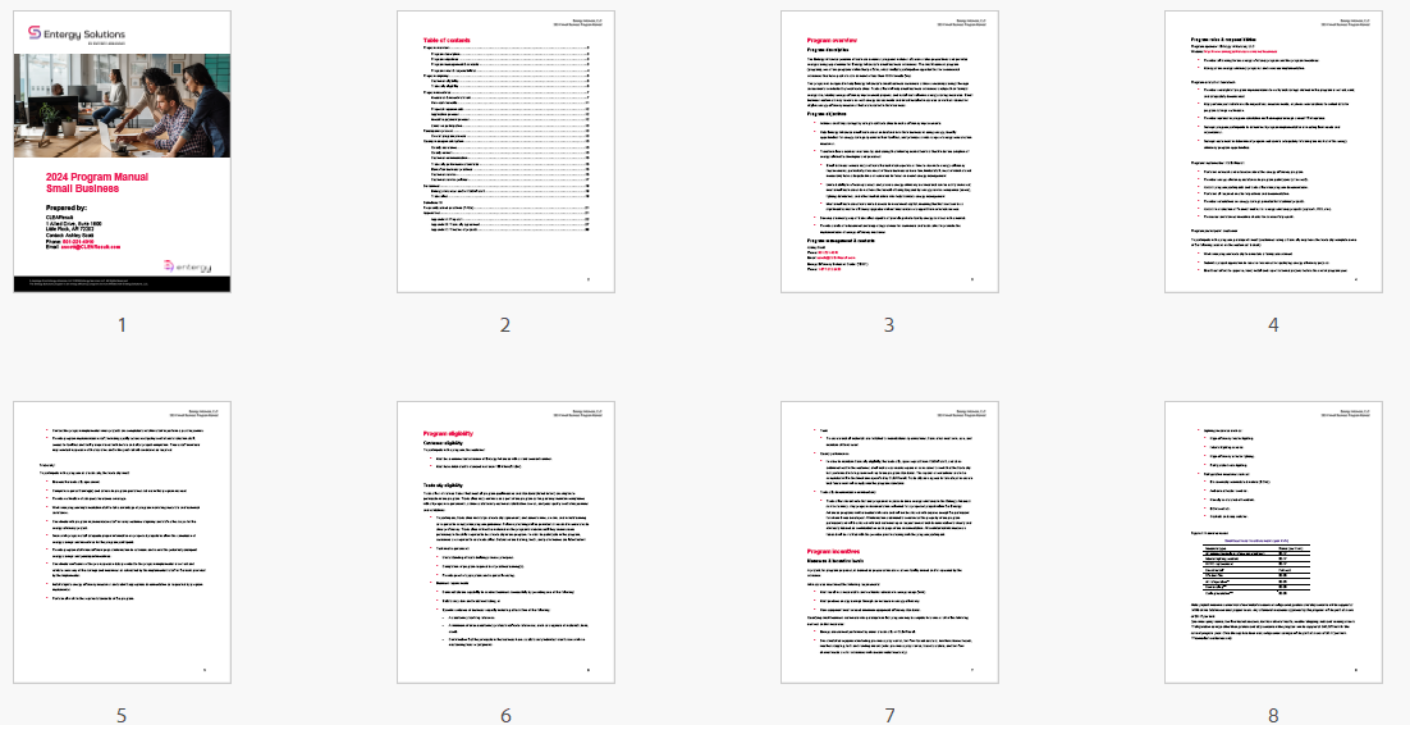
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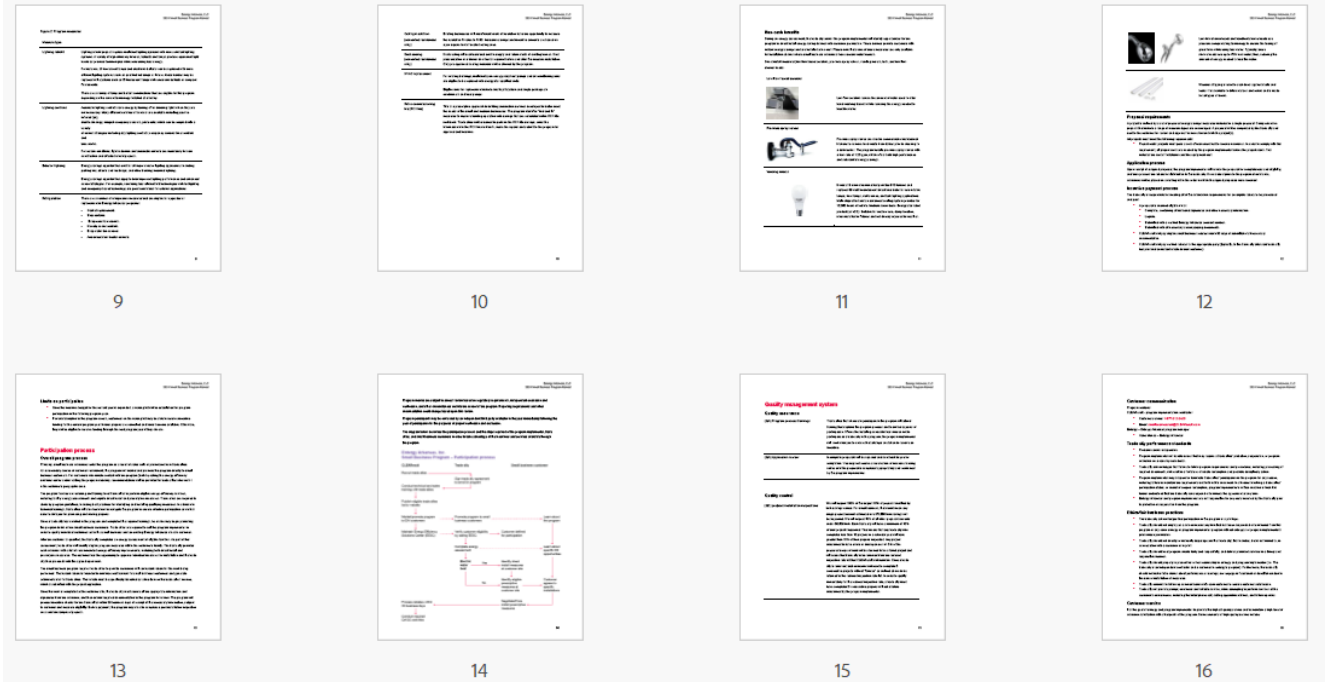
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3.7 Small Business Solutions

3.7.1 Small Business Solutions Program Manual 2024



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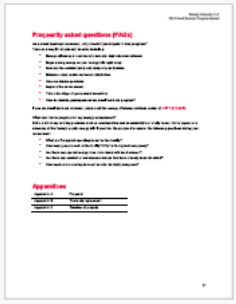
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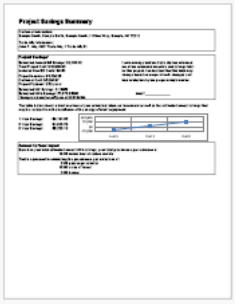
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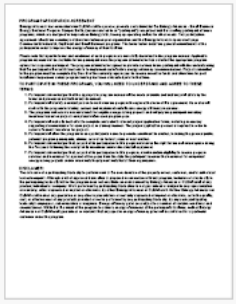
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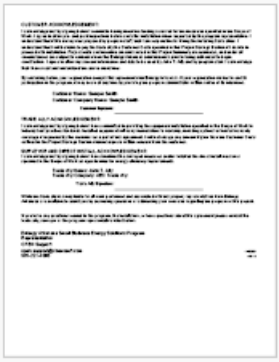
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3.7.2 Small Business Solutions Flyer



Entergy Solutions

Small Business Energy Solutions Program

The Small Business Energy Solutions Program helps business owners like you understand why and when energy efficiency upgrades make good financial sense. Our trade allies will work with you to develop and implement a plan to improve your business's energy efficiency, comfort, health, safety and more.

We'll help you

- Improve the efficiency and performance of your facility.
- Achieve significant, long-term energy savings.
- Earn incentives to help offset the cost of energy efficiency upgrades.

Benefits

- Financial incentives.
- Reduced energy costs and non-energy-related impacts.
- Access to trade ally network.
- No-cost walk-through energy assessment and energy efficiency product installations including:
  - Showerheads.
  - Low-flow aerators.
  - Pre-rinse spray valves (electric water heater customers only).
  - LEDs.
- Weather stripping.

Who is eligible?

Small business customers with a valid Entergy Arkansas account and less than 100kW peak demand over the past 12 months are eligible.

How to participate

1. Call the Energy Efficiency Solutions Center at 877-212-2420 to speak to a program representative and to be provided a list of trade allies.
2. Your trade ally will contact you to schedule a walk-through energy assessment of your facility.
3. Upon your approval, your trade ally will install the energy-saving improvements identified.
4. Receive instant rebates from your trade ally.

Program incentives

The most common energy efficiency upgrades in small businesses are listed below.

Small business incentive rates (per kWh)	
Lighting/lighting controls	$0.17
Direct install	Full cost
Refrigeration*	$0.30
Duct sealing (converted businesses only)	$0.35
Ceiling insulation (converted businesses only)	$0.35
HVAC replacement	$0.17

*Total savings allocation for refrigeration savings will be capped at 300,000 kWh for the 2023 program year.

Questions? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/smallbusiness.

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Eligible upgrades

Upgrade	Description
Lighting retrofit	Lighting retrofit projects replacing inefficient lighting systems with more efficient ones are eligible. An example is linear fluorescent systems being replaced with LED lamps or metal halides with T5 fluorescent bulbs. A variety of lamp and ballast combinations are eligible for this program, depending on the current technology installed at a facility.
Lighting controls	Automatic lighting controls save energy by turning off or dimming lights when they are not needed. Available sensors include passive infrared, dual-technology, integral occupancy sensors and photocells, which are used with controls that manage usage based on daylight hours, occupancy or with adjustable timers.
Exterior lighting	Energy can be saved on many major exterior lighting applications—including parking lots, streets and roadways, and other building-mounted lighting—by improving lighting performance, control strategies or both. An example would be retrofitting with LED lighting.
Refrigeration	Measures eligible for upgrades or replacement include evaporator fan upgrades to electronically commutated motors, anti-sweat heater controls and refrigerated door gaskets.
Direct install measures	The following direct install measures are eligible for upgrades or replacement: low-flow faucet aerators, pre-rinse spray valves, LEDs and weather stripping.
Ceiling insulation (converted buildings only)	Existing businesses with insufficient levels of insulation have the opportunity to increase the insulation R-value to R-30. Insulation savings and incentives are based per sq. ft. of treated ceiling area.
Duct sealing (converted buildings only)	Leaks can be sealed in supply and return ducts of existing businesses. Duct pressurization or a blower door test is required before and after measure installation. Only pre-approved sealing materials are permitted by the program.
HVAC replacement	Inefficient heat pumps and air conditioner units are eligible when replaced with efficient units in both existing buildings and new construction. Eligible units include small split-system and single-package air conditioner units and heat pumps.
CoolSaver℠ A/C Tune-up*	In addition to lowering your facility's energy and maintenance costs, a CoolSaver A/C Tune-up is carefully designed to provide a cooler, more comfortable and more productive work environment. Plus, churches, restaurants and small office customers may qualify for additional energy-saving upgrades—including a smart thermostat.

*Please see the CoolSaver fact sheet for details on the CoolSaver measures and incentive levels available under this program.

Questions? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/smallbusiness.

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3.7.3 Business Convenience Store Flyer

ARKANSAS PUBLIC SERVICE COMMISSION 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

Entergy Solutions



Store up the savings

Achieve long-term energy savings at your convenience store

Reduce consumption, increase savings

It takes a lot of energy to run a convenience store. On average, refrigeration consumes about 40% of a store's energy use, while lighting consumes about 25%—combined, that's more than half of a store's energy use. Our energy efficiency programs offer solutions that can improve the efficiency of not only your refrigeration equipment, but also the lighting and HVAC systems in your facility.

Benefits of energy efficiency upgrades

- Boost your bottom line.
- Lower your energy costs.
- Improve comfort and safety in your store.
- Increase employee productivity.
- Lessen your store's impact on the environment.

Eligible measures

The following measures are available for incentives:

- Refrigeration.
- Lighting.
- HVAC systems.

Participation is simple

1. Enroll in the Entergy Arkansas Small Business Program.
2. We'll perform an on-site inspection of your existing systems at no cost to you.
3. You'll receive customized project recommendations, tailored to your store's needs.
4. We will provide a list of qualified participating trade allies who are trained in the Entergy Arkansas energy efficiency programs.
5. The system upgrades will be installed.
6. You'll receive cash incentives for all qualifying completed projects.

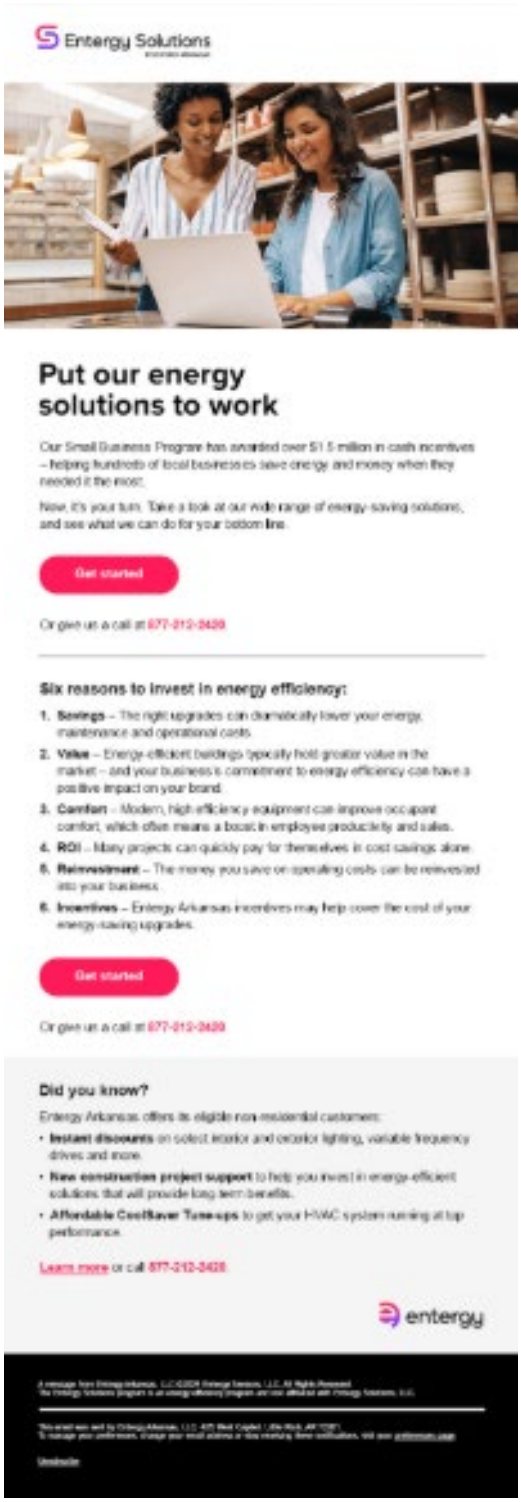
Ready to save? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/smallbusiness.

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3.7.4 Small Business Segmented Email 2024 Retail

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Entergy Solutions

Put our energy solutions to work

Our Small Business Program has awarded over $1.5 million in cash incentives – helping hundreds of local businesses save energy and money when they needed it the most.

Now, it's your turn. Take a look at our wide range of energy-saving solutions, and see what we can do for your bottom line.

Get started

Or give us a call at 877-212-2428

Six reasons to invest in energy efficiency:

1. **Savings** – The right upgrades can dramatically lower your energy, maintenance and operational costs.
2. **Value** – Energy-efficient buildings typically hold greater value in the market – and your business's commitment to energy efficiency can have a positive impact on your brand.
3. **Comfort** – Modern, high-efficiency equipment can improve occupant comfort, which often means a boost in employee productivity and sales.
4. **ROI** – Many projects can quickly pay for themselves in cost savings alone.
5. **Reinvestment** – The money you save on operating costs can be reinvested into your business.
6. **Incentives** – Entergy Arkansas incentives may help cover the cost of your energy-saving upgrades.

Get started

Or give us a call at 877-212-2428

Did you know?

Entergy Arkansas offers its eligible non-residential customers:

- **Instant discounts** on select interior and exterior lighting, variable frequency drives and more.
- **New construction project support** to help you invest in energy-efficient solutions that will provide long-term benefits.
- **Affordable CoolSaver Tune-ups** to get your HVAC system running at top performance.

Learn more or call 877-212-2428

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3.7.5 Small Business Restaurant Flyer

Entergy Solutions



Serve up the savings

Achieve long-term savings at your restaurant through energy efficiency

Did you know that the average restaurant uses 5–10 times more energy per square foot than other commercial buildings?* Our Large Commercial & Industrial Program and Small Business Program help restaurant owners like you invest in cost-effective, turnkey improvements that will narrow the energy-consumption gap between you and neighboring businesses. Since these improvements result in lower energy bills month after month, they often pay for themselves over time while making your restaurant more comfortable for customers and employees.

*Source: energystar.gov

Ways to save

Our program offers incentives and services on energy-efficient equipment and measures, including:

- Upgrading heat pumps, air conditioning units and other HVAC equipment with a CoolSaver™ A/C Tune-up.
- Implementing technologies that boost refrigeration efficiency.
- Installing energy-efficient lighting and advanced lighting controls.
- Equipping your kitchen with demand-based ventilation controls.

Get started

To help you identify facility-specific upgrades that are right for you, we offer free on-site inspections of your restaurant's refrigeration, lighting, and heating and cooling systems.

To start saving, contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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Available incentives

Some of the energy-saving measures eligible for incentives under the program include:

Upgrade	Estimated annual electricity savings (kWh)	Estimated annual energy cost savings
Refrigeration		
Installing an anti-sweat heater control on a refrigerated display case with five doors.	2,737	$246
Equipping a 3' x 7' freezer or refrigerator door with a strip curtain.	3,375	$304
Installing an energy-efficient novelty case cooler.	4,604	$414
Installing a refrigerator door gasket.	1,192	$107
HVAC controls		
Installing hood controls in your kitchen.	4,227	$380
Upgrading to SEER 16 or better HVAC unit.		
Using controls for scheduling, set points, setbacks and improved occupant comfort.		
Lighting controls		
Installing a two-fixture fluorescent or LED occupancy sensor in one of your bathrooms.	68	$6
Lighting		
Replacing one 100-watt incandescent lamp in your freezer with a 9-watt LED.	367	$33
Replacing a four-lamp, four-foot T8 lighting fixture with two 18-watt LED tubes.	362	$33
Installing an energy-efficient exit sign.	353	$32
Other		
Installing an aerator that slows the flow of a faucet to 0.5 gallons per minute.	1,437	$129
Installing a pre-rinse spray valve that slows the water flow while maintaining pressure.	5,000	$450

Other energy-saving measures are also eligible for incentives, including high efficiency HVAC units, water heaters, gaskets and strip curtains.

To start saving, contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

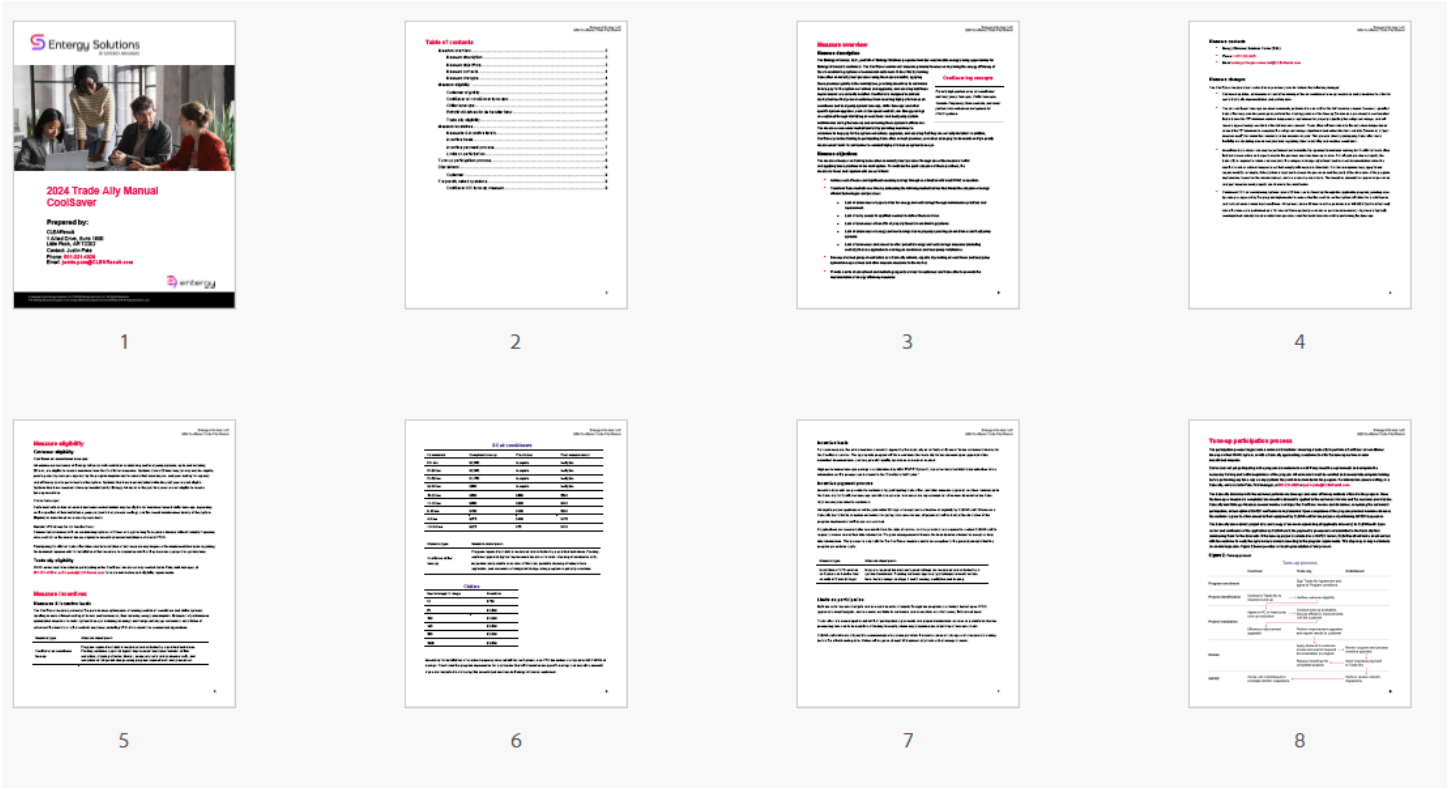
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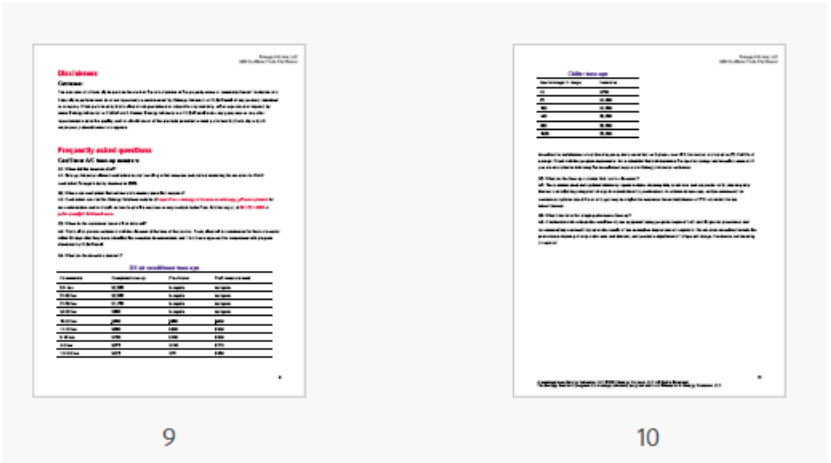
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3.8 Public Institutions Solutions

3.8.1 CitySmart Program Manual 2024





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3.8.2 CitySmart Benchmarking Flyer

Entergy Solutions



Benchmarking

Understand your energy use

According to ENERGY STAR®, 30% of the energy consumed in commercial and industrial facilities is used inefficiently or unnecessarily.* Benchmarking your municipal building, school, university or commercial facility allows you to identify specific energy-wasting issues and pinpoint the most cost-effective ways to save energy and reduce energy costs.

Benefits

- Our no-cost benchmarking service compares your energy performance metrics to those of similar buildings and includes a prioritized list of projects to help you increase efficiency and reduce your monthly Entergy Arkansas bill.
- We also offer a no-cost energy master planning workshop to help stakeholders in your organization collaborate on short- and long-term plans for managing energy more effectively.
- After you've implemented one or more of the suggested energy efficiency improvements, we can perform re-benchmarking services at no cost so that you can measure your energy savings progress and continue improving the efficiency of your buildings.

How to participate

1. Call us at **877-212-2420** or visit **entergyarkansas.com/citysmart** to sign up.
2. Once you complete the registration process, a program representative will collect data from your building and provide a comprehensive benchmarking report. If you'd like to sign up for a no-cost energy master planning workshop, notify the program representative.
3. We can also provide you with contact details for Entergy Solutions trade allies, who are qualified to install the upgrades recommended in the benchmarking report.
4. Finally, you'll receive cash incentives for any qualified completed projects and be eligible to receive follow-up benchmarking services every two years. To request follow-up benchmarking, call us at **877-212-2420**.

Energy efficiency and benchmarking facts

Organizations that consistently subject their commercial buildings to energy benchmarking can reduce their energy bills by 7% over three years, according to the U.S. Environmental Protection Agency.

- New technologies and renewable energy sources have advanced and grown in popularity in recent years, but according to ENERGY STAR, energy efficiency remains the easiest and most cost-effective way to reduce energy consumption.

CitySmart | SCORE

Questions? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/citysmart.

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3.8.3 CitySmart for Colleges Flyer

Arkansas Public Service Commission: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

Entergy Solutions
BY ENTERGY ARKANSAS



CitySmart℠ Program for colleges

Join the CitySmart Program to identify energy-saving opportunities at your college and receive financial incentives toward energy efficiency upgrades. This program will not only help lower your energy use and costs, but also boost comfort and productivity on campus.

Eligible upgrades

The following upgrades are eligible for financial incentives:

HVAC systems

- Includes installing or replacing air conditioning units, heat pumps, demand-controlled ventilation systems and more.

Lighting

- Includes installing or replacing interior and exterior lighting systems in classrooms, hallways, offices, parking lots and between buildings.

Personal computer power management

- Helps control power use on campus.

How to participate

1. Contact us at **877-212-2420** or visit **entergyarkansas.com/citysmart** to enroll in the CitySmart Program.
2. We'll perform an on-site inspection of your institution's end-use energy systems at no cost to you.
3. You'll receive customized project recommendations tailored to your needs.
4. We will provide a list of qualified participating trade allies who are trained in the Entergy Arkansas energy efficiency programs.
5. You'll receive cash incentives for all qualifying completed projects.

College and university energy facts

- Lighting accounts for about 30% of the annual electricity consumed by educational facilities in the U.S.**
- HVAC makes up approximately 46% of the annual electricity consumed by educational institutions in the U.S.**
- Colleges and universities in the U.S. spend almost $14 billion per year on energy.*

*Source: U.S. Environmental Protection Agency
**Source: U.S. Energy Information Administration

Ready to save? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/commercial.

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3.8.4 K-12 School CitySmart Flyer

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Entergy Solutions
BY ENTERGY ARKANSAS



Smart ideas for school savings

Energy efficiency is vital to helping balance school budgets. The nation's 17,450 K-12 school districts spend more than $5 billion annually on energy costs alone.

When districts implement energy-efficient improvements, they save up to 30% on their annual energy bills and also prevent harmful greenhouse gas emissions, which improves the learning environment.* It is estimated that $2 billion of that 30%—an amount equivalent to the cost of nearly 40 million new textbooks**—can be saved by improving energy efficiency through programs like the Entergy Arkansas CitySmart℠ Program.

Lowering your Entergy bill is as easy as 1-2-3

Once you've enrolled in the CitySmart | SCORE Program, a program representative will perform an on-site inspection of your facility's end-use energy systems at no cost to you.

After determining which measures will achieve maximum savings, the program representative will compare the data gathered to industry standards. Such measures typically include interior and exterior lighting technologies, HVAC systems and computer power management.

Next, you will receive a customized list of recommendations. This list prioritizes projects that, if implemented, will increase efficiency and significantly reduce your Entergy bills.

If needed, we can provide a list of qualified trade allies enrolled in Entergy Arkansas' CitySmart | SCORE Program that can install the upgrades. Finally, you'll receive cash incentives for any qualified, completed projects.

K-12 energy facts

- A properly illuminated and ventilated environment is among the many factors that contribute to increased productivity in the classroom, which in turn affects performance and achievement.
- Typically, one-third of the energy used goes to waste largely due to outdated equipment and technology.
- Energy costs are a typical school district's second largest operating expense, after salaries. That's more than the cost of computers and textbooks combined.

Source: *U.S. EPA, 2; DOE, 2006008.p DOE, Updated U.S. EPA, 2004b
Source: **energystar.gov

Ready to save? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit entergyarkansas.com/citysmart.

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3.8.5 Case Study Little Rock CVB

Entergy Solutions



Little Rock Convention & Visitors Bureau

The opportunity

Little Rock Convention & Visitors Bureau was looking to lower energy use in its Arkansas facility. The bureau reached out to Entergy Arkansas, having worked with the utility company before. During an energy audit, several lighting upgrade opportunities were identified. The bureau enrolled in the Entergy Arkansas CitySmart – SCORE Program to have the work completed.

The project

At the Little Rock Convention & Visitors Bureau facility, over 450 fixtures were replaced or installed during the project. The interior lighting retrofit consisted of replacing 1,000 W high-bay metal halides—which were running 24/7—as well as metal halide troffers and high-bay quartz fixtures all with LEDs. The facility also had advanced lighting controls installed, which will allow the building operator to schedule when the lights are running and to dim them when the space is unoccupied. Overall, 24% of the project savings came from these advanced lighting controls, a measure few customers choose to implement.

Project at a glance

1,195,884
Annual kWh savings

$167,423
Incentives paid

$95,670
Estimated annual savings

2.3 years
Payback period

The results

The project is estimated to save Little Rock Convention & Visitors Bureau **$95,670** annually. The bureau received **$167,423** in incentives from Entergy Arkansas, putting the payback period at 2.3 years. It saved **1,195,884 kWh** annually, which equates to the greenhouse gas emissions from 178 passenger vehicles driven for one year or the CO^2 emissions from 895,828 pounds of coal burned, according to U.S. Environmental Protection Agency calculations. Little Rock Convention & Visitors Bureau was so pleased with the results, it plans on completing additional interior and exterior lighting retrofits and phase two of the chiller plant optimization.

Questions?

To learn more about the CitySmart – SCORE Program, contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/citysmart**.

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3.8.6 Case Study Pulaski County SSD

Entergy Solutions



The opportunity

To reduce costs and improve learning environments for students throughout the Pulaski County Special School District (PCSSD), administrators partnered with the staff of Entergy Arkansas CitySmart – SCORE Program to identify cost-effective ways to improve energy efficiency throughout the district.

The project

According to ENERGY STAR®, 60% of the computers and monitors at organizations such as K-12 schools are left on at night, and 40% of monitors are not enabled for power management. This results in energy waste that costs schools and other organizations about $750 million every year. To reduce energy costs associated with ineffective computer power management, PCSSD worked with Entergy Arkansas to install PC power management software at 25 schools throughout the district.

Project at a glance

2,357,094
Annual kWh savings

$190,714
Incentives paid

$188,567
Estimated annual savings

0 months
Payback period

The results

PCSSD now houses 1,444 laptops and 4,522 desktops that are equipped with power management software, which will save the district an estimated **$188,567** in energy costs each year. To help PCSSD finance the project, the CitySmart – SCORE Program provided over **$190,000** in cash incentives, which covered the entire cost of the upgrade.

Prior to this project, PCSSD worked with the CitySmart – SCORE Program staff to improve interior lighting quality and efficiency by replacing metal halide lighting fixtures with T-5 fixtures in 11 schools throughout the district. Exterior lighting is next for PCSSD administrators plan to install energy-saving LED fixtures throughout the district.

Questions?

To learn more about the CitySmart – SCORE Program, contact the Energy Efficiency Solutions Center at **877-212-2420** or visit **entergyarkansas.com/citysmart**.

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3.8.7 Case Study UACCM

Entergy Solutions



University of Arkansas Community College at Morrilton

The opportunity

Entergy Arkansas' Continuous Energy Improvement (CEI) initiative helps qualified facilities achieve lasting energy cost savings through simple, low- and no-cost improvements. Focusing on behavioral and operational changes, our CEI team offers personalized, step-by-step guidance, resources and yearly incentives to embed energy efficiency into your organization's culture. Available to schools, governments and municipalities through our CitySmart Program, CEI recently helped the University of Arkansas Community College at Morrilton lower their overall electricity use by 9.89%.

The initiative

Starting with an engineering walk-through of the school's facilities, the CEI team identified several no-cost actions the school staff could take to save energy when the facilities were less occupied.

Ongoing improvements include:

- **Adjusting HVAC schedules** to increase building setpoints on nights and weekends when buildings were unoccupied.
- **Implementing a shutdown checklist** for staff to use when closing buildings for the evenings and weekends.
- **Organizing staff walk-throughs** before long holiday breaks to ensure equipment is turned off and/or unplugged.

The results

The 16 participating facilities saw their electricity use drop by an average of **9.89%**, with some individual facilities saving **as much as 20%**. In financial terms, the improvements are saving UACCM an annual **$14,353** in energy costs and earning them another **$3,377 a year** in incentives from Entergy Arkansas.

Progress to date

9.89%
Reduction in overall electricity use

$14,353
Estimated annual cost savings

168,859 kWh
Estimated annual energy savings

$3,377
Estimated annual incentive

"I'm excited to see the campus embrace this effort. Not only is it the right thing to do, but it also allows us to use some of the money we have saved to do even more projects."

– Allen Holloway, Director of Facilities, UACCM

"We are very happy for UACCM for their commitment to energy improvement."

– Kenny Mohammed, Customer Service Manager, Entergy Arkansas

Questions?

Reach out to the CEI team at **501-265-0249** or **cei.central@clearesult.com**. For all the ways we can help your business save, visit **entergyarkansas.com/citysmart** or call our Energy Efficiency Solutions Center at **877-212-2420**.

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3.8.8 CitySmart SCORE Flyer

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Entergy Solutions



Energy master planning workshop

Learn how to plan ahead for long-term energy savings.

A starting point for evolving needs

The Entergy Arkansas CitySmart™ – SCORE Program offers energy master planning workshops to help you identify long-term strategies for controlling energy use and costs. These facilitated sessions bring together members from across your organization to work as a team to gain cross-functional consensus on energy-saving strategies, even as the organization evolves.

Our **no-cost** energy master planning workshop is available to anyone who has received an energy benchmarking report from the CitySmart – SCORE Program.

Easy energy efficiency gains

New technologies and renewable energy sources have advanced and grown in popularity in recent years, but energy efficiency remains the easiest and most cost-effective way to reduce energy consumption. In fact, up to 30% of the energy consumed in commercial and industrial facilities is used inefficiently or unnecessarily. By adopting better energy management practices, like those explored in the energy master planning workshop, most organizations can reduce their annual energy costs by 2–10%.*

*Source: energy.gov

How will you benefit?

During your facilitated energy master planning workshop, your team will develop:

- Ways to identify your organization's energy management strengths, weaknesses and opportunities for improvement.
- Strategies to take advantage of every opportunity to reduce energy use and save money.
- A customized energy master plan that includes short- and long-term goals.
- New skills to adjust your energy master plan to account for budget fluctuations, changing facility operations, new construction projects and other variables that may occur in the future.

CitySmart | SCORE

How to participate

To request a customized benchmarking report or to get started with an energy master planning workshop, visit **entergyarkansas.com/citysmart** or call **877-212-2420**.

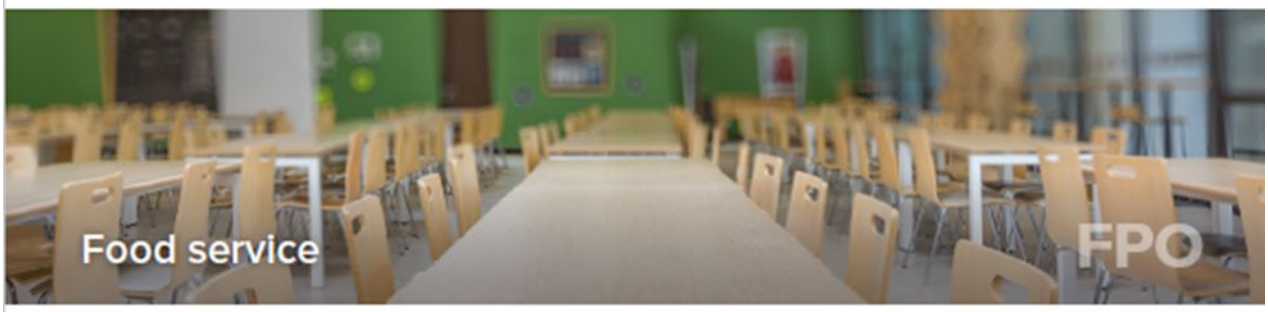
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3.8.9 Food Service Daily Shutdown Flyer 2024

Entergy Solutions
BY ENTERGY ARKANSAS



Daily energy-saving actions

Our organization is participating in an innovative program aimed at reducing our energy costs by incorporating energy-saving actions into our daily routines. Together we can achieve 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 use.
- ☐ 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 after service.
- ☐ Consolidate cooler space and unplug any stand-up units not used.
- ☐ Shut off ice machines and drain during break times.
- ☐ Use exhaust fans only when cooking. Report any air returned to the space through the exhaust fan system. Air should be removed by the fan and not reintroduced to the space.

Water

- ☐ Ensure that faucets are turned off when not in use.
- ☐ Report any water leaks immediately.
- ☐ Ensure dishwashing equipment is only on when washing is active.

Facility-specific items

- ☐ _____
- ☐ _____
- ☐ _____

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3.8.10 Daily Shutdown Flyer

Entergy Solutions
BY ENTERGY ARKANSAS



Daily energy-saving actions

Our school is participating in an innovative program aimed at reducing our energy costs by incorporating energy-saving actions into our daily routines. Together we can achieve 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 use.
- ☐ 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 after service.
- ☐ Consolidate cooler space and unplug any stand-up units not used.
- ☐ Shut off ice machines and drain during break times.
- ☐ Use exhaust fans only when cooking. Report any air returned to the space through the exhaust fan system. Air should be removed by the fan and not reintroduced to the space.

Water

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- ☐ Report any water leaks immediately.
- ☐ Ensure dishwashing equipment is only on when washing is active.

Facility-specific items

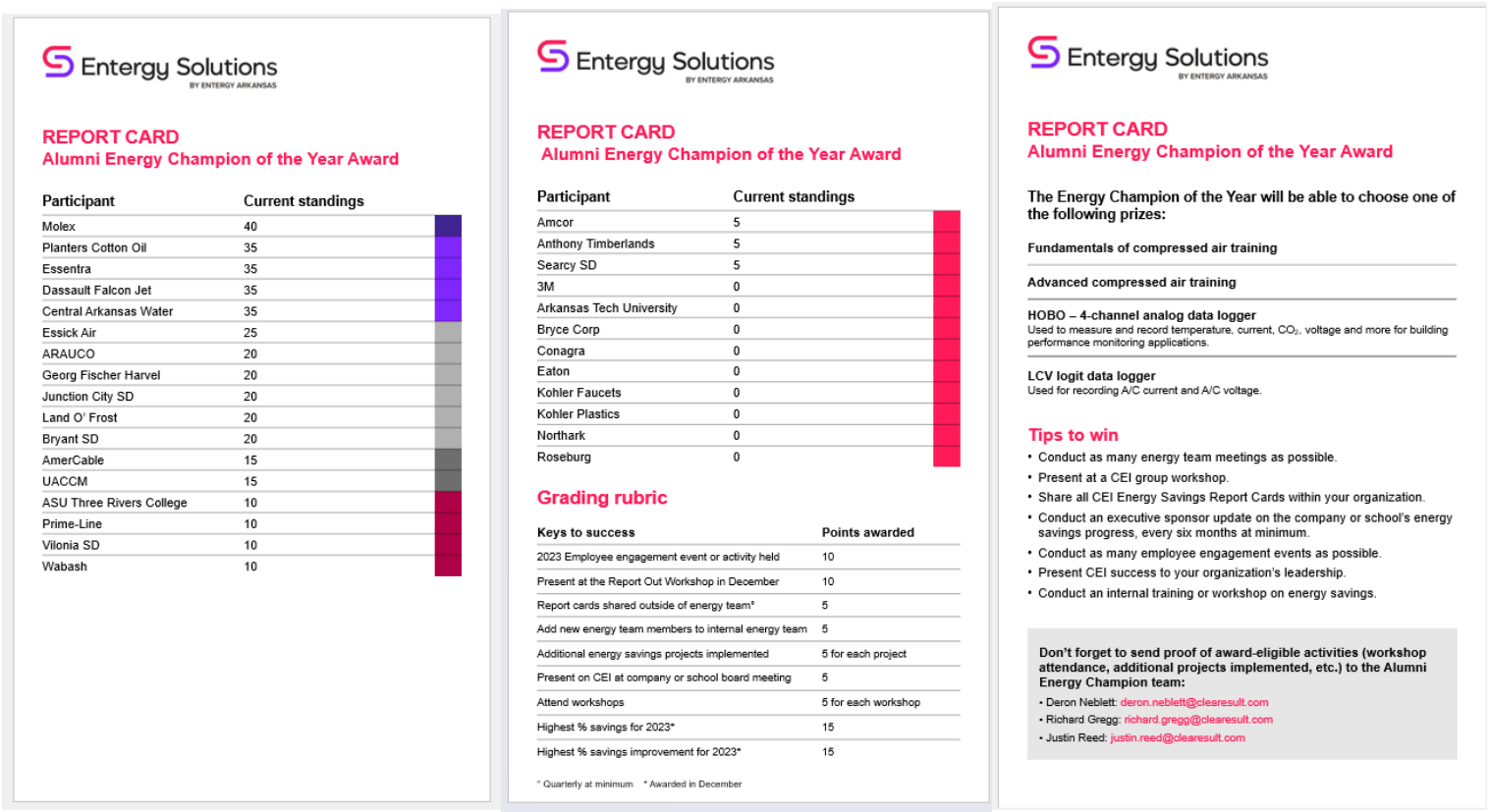
- ☐ _____
- ☐ _____
- ☐ _____

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3.8.11 Energy Champion of the Year Report Card



Entergy Solutions
BY ENTERGY ARKANSAS

REPORT CARD
Alumni Energy Champion of the Year Award

Participant	Current standings
Molex	40
Planters Cotton Oil	35
Essentra	35
Dassault Falcon Jet	35
Central Arkansas Water	35
Essick Air	25
ARAUCO	20
Georg Fischer Harvel	20
Junction City SD	20
Land O' Frost	20
Bryant SD	20
AmerCable	15
UACCM	15
ASU Three Rivers College	10
Prime-Line	10
Vilonia SD	10
Wabash	10

Entergy Solutions
BY ENTERGY ARKANSAS

REPORT CARD
Alumni Energy Champion of the Year Award

Participant	Current standings
Amcor	5
Anthony Timberlands	5
Searcy SD	5
3M	0
Arkansas Tech University	0
Bryce Corp	0
Conagra	0
Eaton	0
Kohler Faucets	0
Kohler Plastics	0
Northark	0
Roseburg	0

Grading rubric

Keys to success	Points awarded
2023 Employee engagement event or activity held	10
Present at the Report Out Workshop in December	10
Report cards shared outside of energy team°	5
Add new energy team members to internal energy team	5
Additional energy savings projects implemented	5 for each project
Present on CEI at company or school board meeting	5
Attend workshops	5 for each workshop
Highest % savings for 2023*	15
Highest % savings improvement for 2023*	15

° Quarterly at minimum * Awarded in December

Entergy Solutions
BY ENTERGY ARKANSAS

REPORT CARD
Alumni Energy Champion of the Year Award

The Energy Champion of the Year will be able to choose one of the following prizes:

Fundamentals of compressed air training

Advanced compressed air training

HOBO – 4-channel analog data logger
Used to measure and record temperature, current, CO_2, voltage and more for building performance monitoring applications.

LCV logit data logger
Used for recording A/C current and A/C voltage.

Tips to win

- Conduct as many energy team meetings as possible.
- Present at a CEI group workshop.
- Share all CEI Energy Savings Report Cards within your organization.
- Conduct an executive sponsor update on the company or school's energy savings progress, every six months at minimum.
- Conduct as many employee engagement events as possible.
- Present CEI success to your organization's leadership.
- Conduct an internal training or workshop on energy savings.

Don't forget to send proof of award-eligible activities (workshop attendance, additional projects implemented, etc.) to the Alumni Energy Champion team:

- Deron Neblett: deron.neblett@clearesult.com
- Richard Gregg: richard.gregg@clearesult.com
- Justin Reed: justin.reed@clearesult.com

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3.9 Agricultural Energy Solutions

3.9.1 AES Overview Flyer



Save energy; increase your profits

It's a competitive marketplace – more than 40% of Arkansas is farmland, which means agribusinesses of all sizes need to make every dollar count. Making your facilities more energy efficient is a simple and effective way to reduce energy costs and boost productivity.

Entergy Arkansas has developed an Agricultural Energy Solutions Program that provides financial incentives and technical assistance to help your agribusiness replace aging, inefficient equipment and systems with new, energy-efficient technologies. The program is designed to maximize your savings through increased energy efficiency and better-managed energy costs.

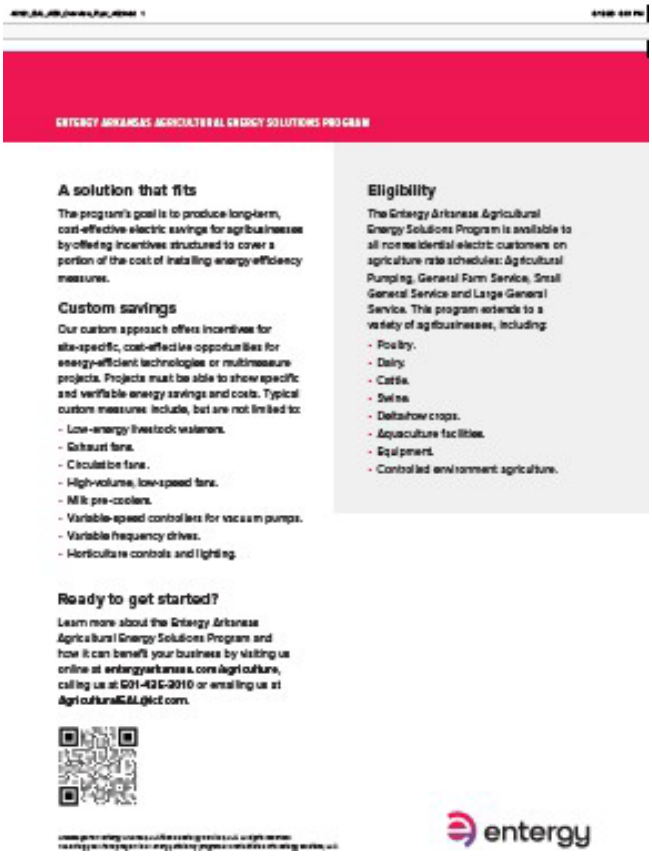
This special opportunity offers you a variety of options to help you build energy efficiency into every project, whether you are retrofitting existing inefficient equipment, purchasing new equipment, replacing equipment at the end of its life span, conducting major renovations or constructing a new facility.

Agricultural Energy Solutions offers

- Financial incentives to reduce the upfront cost of energy efficiency improvements.
- Technical service to provide you with guidance on energy efficiency opportunities.
- Flexibility by allowing you to engage your own qualified contractor or in-house staff.

Benefits for your business

- Energy-efficient technologies reduce your energy use and minimize costs.
- Investments in energy efficiency can offer a fast return on investment, often paying for themselves in less than two years.
- Energy-efficient equipment can streamline operations, enhancing workplace productivity and improving employee comfort.



3.9.2 Agricultural Energy Solutions Indoor Lighting Flyer

ARKANSAS PUBLIC SERVICE COMMISSION 5/6/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Boost production, lower costs and save energy by installing energy-efficient lighting equipment

Lighting can be a major contributor to your horticulture facility's energy use and costs. Installing energy-efficient lighting can make your facility more productive and help you save on your Entergy bill.

Entergy Arkansas offers incentives on eligible LEDs, lighting controls and other qualifying lighting equipment to help you save energy while lowering operating costs.

Discover the benefits

No matter the size of your indoor grow room, greenhouse or other indoor horticulture facility, LEDs:

- Boost production to help you grow your green faster and easier.
- Lower HVAC costs by reducing the energy it takes to cool your facility.
- Improve employee and visitor safety.
- Enhance security.
- Set you apart as an environmentally responsible green facility.

More ways to save

By providing incentives to horticultural businesses that are installing energy-efficient equipment, Entergy Arkansas helps reduce upfront improvement expenses, as well as long-term energy costs. In addition to LEDs, incentives are available on variable frequency drives for irrigation pumps and ventilation equipment.

According to the U.S. Department of Energy, horticulture lighting uses annual electricity equal to approximately 550,000 U.S. households. Switching to LEDs could reduce annual energy use by 40% – saving approximately $240 million per year.

Start saving

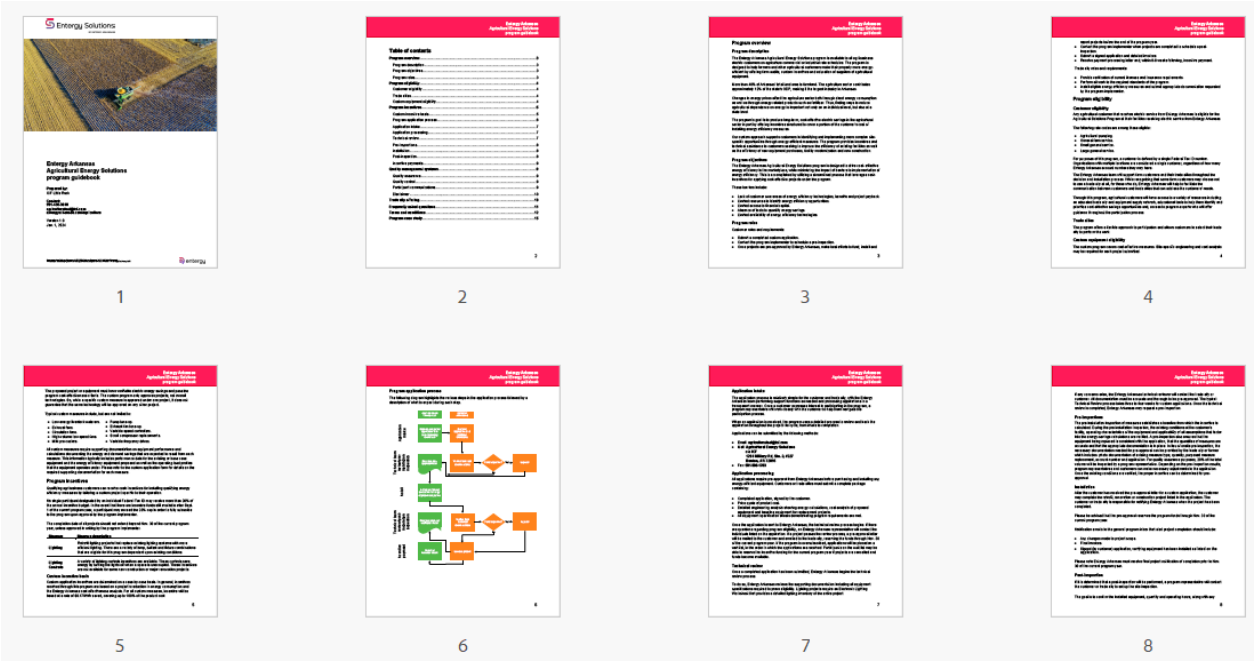
To learn more about the Agricultural Energy Solutions Program, call 501-435-3010, visit entergyarkansas.com/agriculture or scan the QR code.

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3.9.3 AES Guidebook 2024 Release


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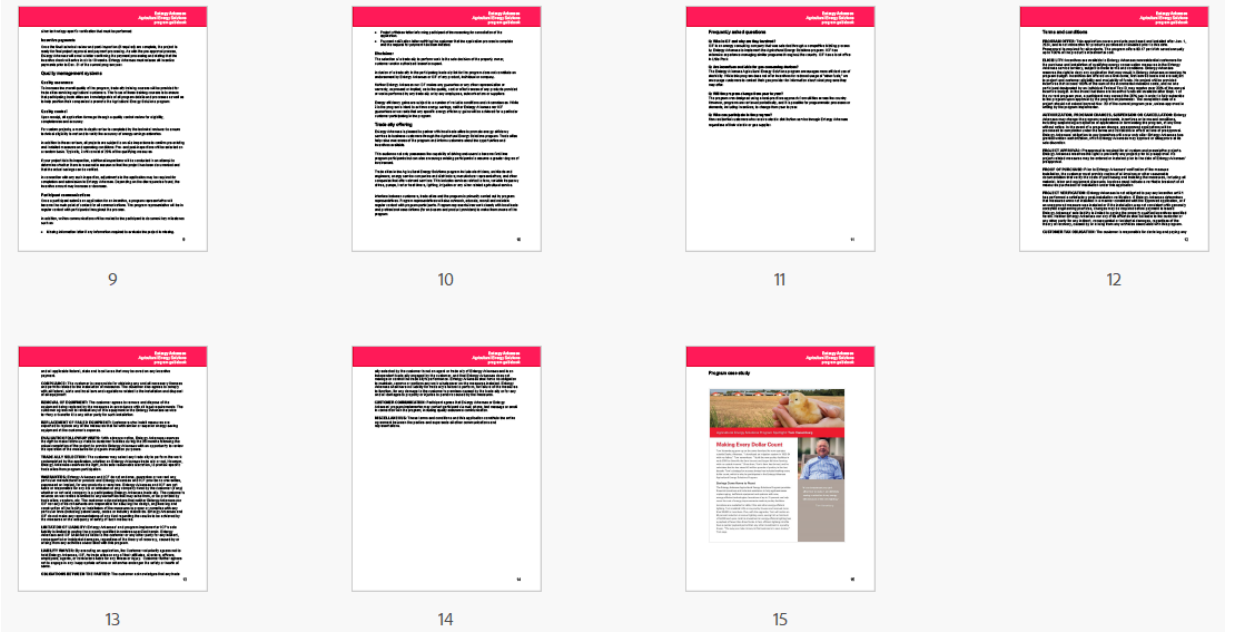
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3.9.4 AES Ag Fan Motor Flyer



Improve your bottom line with high efficiency variable frequency drive fans

Fans can make up the majority of electrical use and costs at your facility, so it only makes sense to want to take control of this energy usage. Take the first step by installing high efficiency variable frequency drive (VFD) fans, which are equipped with electronic devices that control the speed and torque of the electric motor by varying the frequency and voltage supplied to each fan. VFD fans can help you cut down on your energy consumption and save you more in the long run.

Entergy Arkansas offers **incentives of up to 100%** of the project costs on eligible VFD fan system upgrades with custom rebates available to eligible customers.

Get the benefits

Precise control. VFDs offer unmatched control and flexibility over the speed of the fan, allowing for fine-tuning to meet the specific requirements of your industrial process while improving system performance and efficiency.

System optimization. By using VFDs on each fan, the entire system can be optimized for improved energy efficiency and allow for coordinated control of fan speeds, ensuring that the airflow and pressure requirements are met while avoiding excessive energy consumption.

Energy efficiency. A VFD fan's motor speed can be adjusted to match the specific demand, allowing the fan to run at a lower speed when the airflow requirements are lower. Even a small reduction in speed results in significant energy savings.

Even more ways to save

By providing incentives to businesses that are installing energy-efficient equipment, Entergy Arkansas helps reduce upfront improvement expenses, as well as long-term energy costs. **In addition to VFD fans, incentives are available for LED lighting and ventilation equipment.**

Start saving today

To learn how you can get preapproved and discover more about the Agricultural Energy Solutions program, call **501-435-3010**, visit **entergyarkansas.com/agriculture** or scan the **QR code**.

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3.9.5 AES Social Media 2024



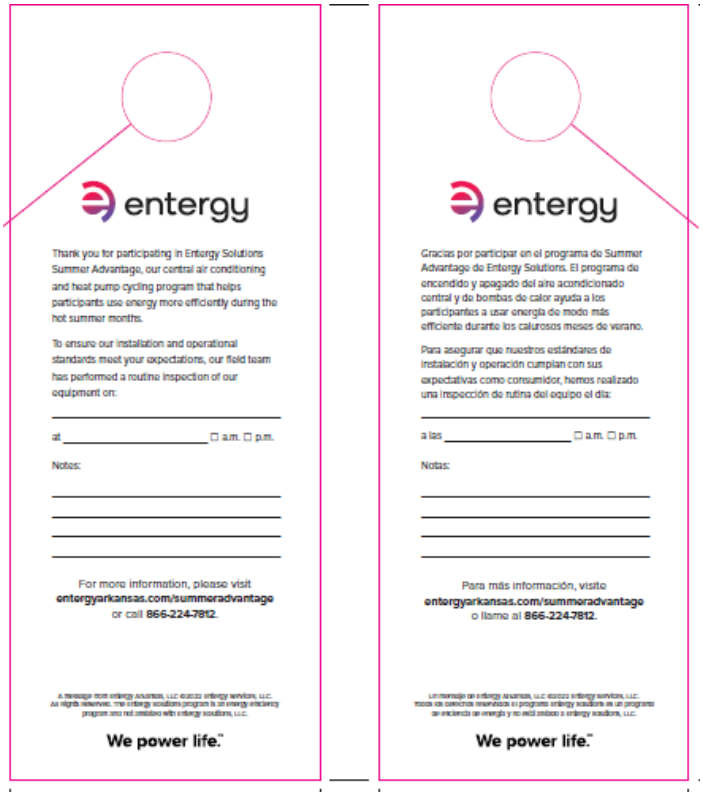




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3.10 Residential Direct Load Control

3.10.1 Bilingual Door Hanger



entergy

Thank you for participating in Entergy Solutions Summer Advantage, our central air conditioning and heat pump cycling program that helps participants use energy more efficiently during the hot summer months.

To ensure our installation and operational standards meet your expectations, our field team has performed a routine inspection of our equipment on:

_____

at _____ ☐ a.m. ☐ p.m.

Notes:

_____

_____

_____

_____

For more information, please visit
entergyarkansas.com/summeradvantage
or call **866-224-7812**.

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We power life.™

entergy

Gracias por participar en el programa de Summer Advantage de Entergy Solutions. El programa de encendido y apagado del aire acondicionado central y de bombas de calor ayuda a los participantes a usar energía de modo más eficiente durante los calurosos meses de verano.

Para asegurar que nuestros estándares de instalación y operación cumplan con sus expectativas como consumidor, hemos realizado una inspección de rutina del equipo el día:

_____

a las _____ ☐ a.m. ☐ p.m.

Notas:

_____

_____

_____

_____

Para más información, visite
entergyarkansas.com/summeradvantage
o llame al **866-224-7812**.

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3.10.2 Summer Advantage Preseason Postcard v.1

Savings are right around the corner

entergy

2513 McCain Blvd., Ste. 2, Box #280
North Little Rock, AR 72116-7930

Dear Summer Advantage Program Participant,

The Summer Advantage Program season is about to begin. You are participating at the **50%** level, which rewards you with an incentive payment of up to **$25** this December.

If you become concerned about the operation of your central air conditioner or heat pump this summer, please call **866-224-7812**. Before calling, please check your digital cycling unit (DCU) for a conservation period. You will need to go outside to inspect the device. A red LED light will appear in the window of the DCU throughout the conservation period.

Thank you for your participation in this important energy efficiency program for Arkansas.

The Summer Advantage Program season begins **June 1** and continues through **Sept. 30.**

ENRPS2301

John Q. Smith
1234 Main Street
Anytown, US 01776-5771

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Ready. Set. SAVE.

We power life.™

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3.10.3 Summer Advantage Preseason Postcard v.2

Savings are right around the corner

Dear Summer Advantage Program Participant,

The Summer Advantage Program season is about to begin. You are participating at the **75%** level, which rewards you with an incentive payment of up to **$40** this December.

If you become concerned about the operation of your central air conditioner or heat pump this summer, please call **866-224-7812**. Before calling, please check your digital cycling unit (DCU) for a conservation period. You will need to go outside to inspect the device. A red LED light will appear in the window of the DCU throughout the conservation period. You may also call us if you wish to lower your participation level to 50%.

Thank you for your participation in this important energy efficiency program for Arkansas.

The Summer Advantage Program season begins June 1 and continues through Sept. 30.

ENRPS2302

entergy

2512 McCain Blvd., Ste. 2, Box #280
North Little Rock, AR 72116-7680

John Q. Smith
1234 Main Street
Anytown, US 01776-6771

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Ready. Set. SAVE.

We power life.™

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3.11 Smart Direct Load Control

3.11.1 EAL DLC Newsletter Article May 2024



Stay ahead of the season with a smart thermostat

It's the perfect time to upgrade to a smart thermostat that provides convenience and insights while giving you control over your home's comfort and energy usage. With Entergy Solutions, you can get a smart thermostat with professional installation at no cost to you - a $225 value. Plus, you can receive a cash incentive of up to $40 each year you participate in the Entergy Arkansas Smart Direct Load Control Program.

Claim your savings

ARKANSAS ELECTRIC ENERGY CONSUMER RIGHTS ACT Received: 4/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.11.2 EAL DLC Newsletter Article December 2024

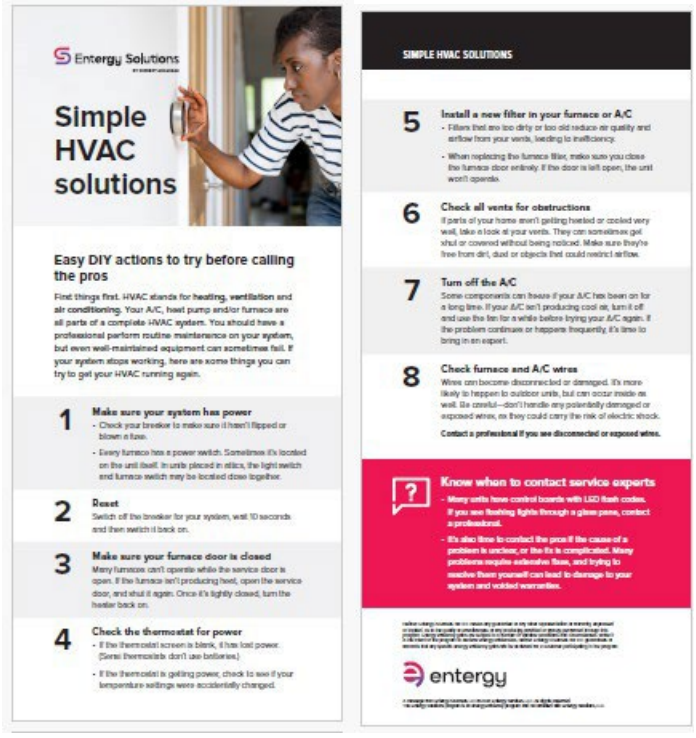


'Tis the season to save energy with a smart thermostat

Start saving energy and money now.

Save now ›

3.11.3 EAL_DLC_Troubleshooting_Guide



Entergy Solutions

Simple HVAC solutions

Easy DIY actions to try before calling the pros

Find things first. HVAC stands for heating, ventilation and air conditioning. Your A/C, heat pump and/or furnace are all parts of a complete HVAC system. You should have a professional perform routine maintenance on your system, but even well-maintained equipment can sometimes fail. If your system stops working, here are some things you can try to get your HVAC running again.

1 **Make sure your system has power**
- Check your breaker to make sure it hasn't flipped or blown a fuse.
- Every furnace has a power switch. Sometimes it's located on the unit itself. In units placed in attics, the light switch and furnace switch may be located close together.

2 **Reset**
Switch off the breaker for your system, wait 10 seconds and then switch it back on.

3 **Make sure your furnace door is closed**
Many furnaces can't operate while the service door is open. If the furnace isn't producing heat, open the service door, and shut it again. Once it's tightly closed, turn the heater back on.

4 **Check the thermostat for power**
- If the thermostat screen is blank, it has lost power. (Some thermostats don't use batteries.)
- If the thermostat is getting power, check to see if your temperature settings were accidentally changed.

SIMPLE HVAC SOLUTIONS

5 **Install a new filter in your furnace or A/C**
- Filters that are too dirty or too old reduce air quality and airflow from your vents, leading to inefficiency.
- When replacing the furnace filter, make sure you close the furnace door entirely. If the door is left open, the unit won't operate.

6 **Check all vents for obstructions**
If parts of your home aren't getting heated or cooled very well, take a look at your vents. They can sometimes get shut or covered without being noticed. Make sure they're free from dirt, dust or objects that could restrict airflow.

7 **Turn off the A/C**
Some components can freeze if your A/C has been on for a long time. If your A/C isn't producing cool air, turn it off and use the fan for a while before trying your A/C again. If the problem continues or happens frequently, it's time to bring in an expert.

8 **Check furnace and A/C wires**
Wires can become disconnected or damaged. It's more likely to happen to outdoor units, but can occur inside as well. Be careful—don't handle any potentially damaged or exposed wires, as they could carry the risk of electric shock.

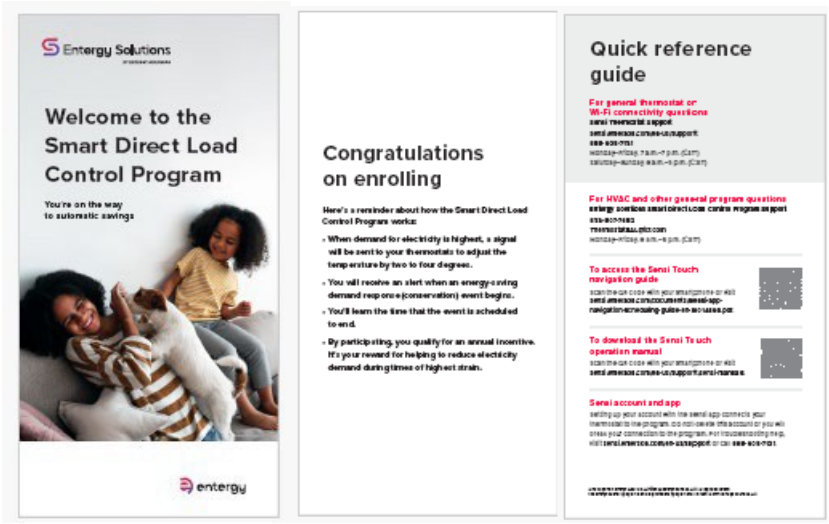
Contact a professional if you see disconnected or exposed wires.

Know when to contact service experts
- Many units have control boards with LED flash codes. If you see flashing lights through a glass pane, contact a professional.
- It's also time to contact the pros if the cause of a problem is unclear, or the fix is complicated. Many problems require exclusive fixes, and trying to resolve them yourself can lead to damage to your system and voided warranties.

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3.11.4 DLC Welcome Trifold Brochure

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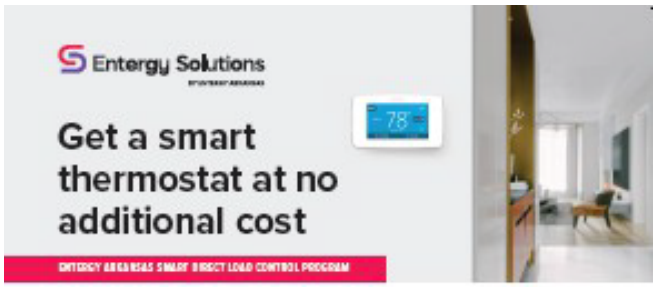
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3.11.5 EAL_DLC_Doorhanger



3.11.6 DLC Standard Program Flyer

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Entergy Solutions

Get a smart thermostat at no additional cost

ENTERGY ARKANSAS SMART DIRECT LOAD CONTROL PROGRAM

Entergy Arkansas is helping its customers save energy the smart way. Join our new Smart Direct Load Control Program for a number of incentives.

Get a smart thermostat

Sign up and receive a smart thermostat with professional installation at no additional cost – a $225 value.

Already have a smart thermostat?

Sign up with your qualifying Emerson Sensi™ Smart Thermostat or Honeywell Wi-Fi Thermostat and receive an enrollment incentive of $50 for residential customers or up to $100 for business customers.

Visit entergyarkansas.com/thermostat for a list of eligible models.

Want more incentives?

Depending on your level of participation, you may also receive an annual incentive of up to $40 per thermostat enrolled (residential customers) or $100 for each thermostat (business customers).

Who's eligible?

Entergy Arkansas residential and eligible commercial customers who own their home or business, have central air conditioners and have Wi-Fi are eligible to participate.

How it works

The Smart Direct Load Control Program can help reduce high energy demand in the summer, when tens of thousands of central air conditioners and heat pumps are all running at the same time, putting a strain on the power supply. That's where you come in.

On days when electricity demand is highest, we will automatically send a signal to your thermostat to raise its temperature to a predetermined set point for the length of the demand response event. These events may occur from June 1 through Sept. 30. You may opt out of up to three of these events, but the amount of your annual participation incentive will be reduced. The more you participate, the more you earn.

Benefits

When you automatically reduce your energy use at these important times, you help prevent outages. Plus, Entergy Arkansas will reward you for your participation with a cash incentive at the end of each year.

> "I think this is an amazing opportunity for customers like myself. The thermostat has been a blessing."
> — [illegible] Entergy Solutions customer

ENTERGY ARKANSAS SMART DIRECT LOAD CONTROL PROGRAM

FAQs

What are the advantages of a smart thermostat?

Smart thermostats save you energy all year long by learning how your home responds to weather conditions and adjusting the temperature when you're not home. You can also access the thermostat from mobile devices or computers and receive reports about your home's energy usage and savings. Hello, convenience.

How does the smart thermostat work during demand response events?

On select days with high electrical demand, the thermostat's sensors will help manage your air conditioner's run times to save you energy, which is known as a demand response event.

When a demand response event occurs, your thermostat will temporarily increase your temperature set point by up to four degrees in order to reduce energy usage. If the temperature in your home exceeds this set point, your air conditioner will turn on to keep you comfortable. Once the event is over, your thermostat will return to your regularly scheduled temperature.

When will my smart thermostat be affected?

Your smart thermostat will only be affected during demand response events. Outside of these times, you are free to set your thermostat to your desired schedule and temperature.

How often do demand response events occur?

The number of demand response events in any given year is dependent on weather conditions and is not entirely predictable. However, they may occur on a few hot or humid weekdays between June 1 and Sept. 30. They're not activated on weekends or holidays. For more information, visit entergyarkansas.com/thermostat.

How can I tell an event is occurring?

In most instances, you will receive a notification by email and on your thermostat the day prior to a scheduled event. Please note that in order to participate in demand response events and be eligible for your participation incentive, your thermostat must be online and connected.

Can I opt out of an event?

You will be able to choose up to three events in which you may opt out of participation – right from your phone, tablet or thermostat. If you ever decide you want to cancel participation in an event, you simply opt out. The system will monitor your opt-out activity. Once you have used your three opt-outs for the year, that option will no longer be available to you. For mandatory events, you must call 855-801-6768.

> Save energy and earn cash incentives – all at no additional cost to you.

Let's get started

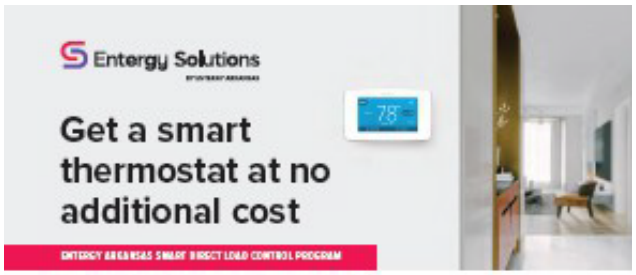
To enroll or learn more, please visit entergyarkansas.com/thermostat, call 833-807-7682 or scan the QR code.

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[illegible]

3.11.7 DLC Co-branded Program Flyer

ARSC Rules Tariff 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Entergy Arkansas is helping its customers save energy the smart way. Join our new Smart Direct Load Control Program for a number of incentives.

Get a smart thermostat
Sign up and receive a smart thermostat with professional installation at no additional cost – a $226 value.

Already have a smart thermostat?
Sign up with your qualifying Emerson Sensi™ Smart Thermostat or Honeywell Wi-Fi Thermostat and receive an enrollment incentive of $50 for residential customers or up to $100 for business customers.
Visit entergyarkansas.com/thermostat for a list of eligible models.

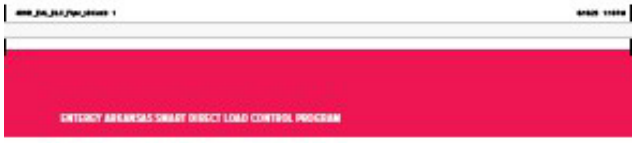
Want more incentives?
Depending on your level of participation, you may also receive an annual incentive of up to $40 per thermostat enrolled (residential customers) or $100 for each thermostat (business customers).

Who's eligible?
Entergy Arkansas residential and eligible commercial customers who own their home or business, have central air conditioners and have Wi-Fi are eligible to participate.

How it works
The Smart Direct Load Control Program can help reduce high energy demand in the summer, when tens of thousands of central air conditioners and heat pumps are all running at the same time, putting a strain on the power supply. That's where you come in.
On days when electricity demand is highest, we will automatically send a signal to your thermostat to raise its temperature to a predetermined set point for the length of the demand response event. These events may occur from June 1 through Sept. 30. You may opt out of up to three of these events, but the amount of your annual participation incentive will be reduced. **The more you participate, the more you earn.**

Benefits
When you automatically reduce your energy use at these important times, you help prevent outages. Plus, Entergy Arkansas will reward you for your participation with a cash incentive at the end of each year.

> **"I think this is an amazing opportunity for customers like myself. The thermostat has been a blessing."**
> — [illegible] Entergy Solutions customer



FAQs

What are the advantages of a smart thermostat?
Smart thermostats save you energy all year long by learning how your home responds to weather conditions and adjusting the temperature when you're not home. You can also access the thermostat from mobile devices or computers and receive reports about your home's energy usage and savings. Hello, convenience.

How does the smart thermostat work during demand response events?
On select days with high electrical demand, the thermostat's sensors will help manage your air conditioner's run times to save you energy, which is known as a demand response event.
When a demand response event occurs, your thermostat will temporarily increase your temperature set point by up to four degrees in order to reduce energy usage. If the temperature in your home exceeds this set point, your air conditioner will turn on to keep you comfortable. Once the event is over, your thermostat will return to your regularly scheduled temperature.

When will my smart thermostat be affected?
Your smart thermostat will only be affected during demand response events. Outside of these times, you are free to set your thermostat to your desired schedule and temperature.

How often do demand response events occur?
The number of demand response events in any given year is dependent on weather conditions and is not entirely predictable. However, they may occur on a few hot or humid weekdays between June 1 and Sept. 30. They're not activated on weekends or holidays. For more information, visit **entergyarkansas.com/thermostat**.

How can I tell an event is occurring?
In most instances, you will receive a notification by email and on your thermostat the day prior to a scheduled event. Please note that in order to participate in demand response events and be eligible for your participation incentive, your thermostat must be online and connected.

Can I opt out of an event?
You will be able to choose up to three events in which you may opt out of participation – right from your phone, tablet or thermostat. If you ever decide you want to cancel participation in an event, you simply opt out. The system will monitor your opt-out activity. Once you have used your three opt-outs for the year, that option will no longer be available to you. For mandatory events, you must call **[illegible]**.

> **Save energy and earn cash incentives – all at no additional cost to you.**

Let's get started
To enroll or learn more, please visit **entergyarkansas.com/thermostat**, call **833-807-7682** or scan the QR code.

Company Name
Phone Number
Email
Website

entergy

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3.11.8 DLC Commercial Standard Flyer

ARKANSAS PUBLIC SERVICE COMMISSION 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Enroll your smart thermostat in the Smart Direct Load Control Program and get up to $200

Entergy Arkansas is helping its commercial customers save energy and money the smart way. Enroll your qualifying smart thermostat in our Smart Direct Load Control Program and earn incentives.

How it works

The Smart Direct Load Control Program helps reduce high energy demand in the summer, when tens of thousands of central air conditioners and heat pumps are all running at the same time, putting a strain on the power supply. **That's where you come in.**

On days when electricity demand is highest, we will automatically send a signal to your thermostat to raise its temperature to a set point for the length of the demand response event. These events may occur from June 1 through Sept. 30.

Benefits

- **Help prevent outages** by automatically reducing your energy use when electrical demand is high.
- **Earn cash incentives** when you enroll and by participating in events. If you already own an eligible device, all you have to do is sign up.
- **Do your part for the environment** by saving energy.

Who's eligible?

Entergy Arkansas commercial customers who own a business, have central air conditioners, have Wi-Fi and have a qualifying smart thermostat are eligible to participate.

Eligible smart thermostats

- Emerson Sensi Touch and Sensi Wi-Fi.
- Honeywell Lyric T5, T5 Plus, T6, T9, T10, 9000 Smart, Wireless FocusPRO and Round Smart.

How to enroll

To enroll your eligible thermostat or learn more, visit **entergyarkansas.com/thermostat** or call **833-807-7682**.

Enrollment incentive

Get **$100** for enrolling your qualifying smart thermostat.

Annual participation incentive

Get **$100** per thermostat enrolled for participating in demand response events.



FAQs

What are the advantages of a smart thermostat?

Smart thermostats save you energy all year long by learning how your business responds to weather conditions and adjusting the temperature. You can also access the thermostat from mobile devices or computers and receive reports about your business's energy usage and savings. Hello, convenience.

How does the smart thermostat work during demand response events?

On select days with high electrical demand, the thermostat's sensors will help manage your air conditioner's run times to save you energy, which is known as a demand response event. When a demand response event occurs, your thermostat will temporarily increase your temperature set point by up to four degrees to reduce energy usage. If the temperature in your business exceeds this set point, your air conditioner will turn on to keep you comfortable. Once the event is over, your thermostat will return to your regularly scheduled temperature.

When will my smart thermostat be affected?

Your smart thermostat will only be affected during demand response events. Outside of these times, you are free to set your thermostat to your desired schedule and temperature.

How often do demand response events occur?

The number of demand response events in any given year varies. Typically, they occur on a few hot or humid weekdays between June 1 and Sept. 30. Events are not activated on weekends or holidays.

How can I tell an event is occurring?

In most instances, you will receive a notification by email and on your thermostat the day prior to a scheduled event. Please note that in order to participate in demand response events and be eligible for your participation incentive, your thermostat must be online and connected.

Can I opt out of an event?

You can opt out of up to three events per year using your phone, tablet or thermostat. The system will monitor your opt-out activity. Once you have used your three opt-outs for the year, that option will no longer be available to you. For mandatory events, you must call **855-801-4768**.



Start saving

Save energy and earn cash incentives by enrolling your smart thermostat in the Smart Direct Load Control Program. Visit **entergyarkansas.com/thermostat**, call **833-807-7682** to enroll or scan the QR code.

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3.11.9 EAL_DLC_Commercial_Co-Branded_Flyer

Arkansas Public Service Commission: 5/1/2025 11:47:51 AM: Received: 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Enroll your smart thermostat in the Smart Direct Load Control Program and get up to $200

Entergy Arkansas is helping its commercial customers save energy and money the smart way. Enroll your qualifying smart thermostat in our Smart Direct Load Control Program and earn incentives.

How it works

The Smart Direct Load Control Program helps reduce high energy demand in the summer, when tens of thousands of central air conditioners and heat pumps are all running at the same time, putting a strain on the power supply. **That's where you come in.**

On days when electricity demand is highest, we will automatically send a signal to your thermostat to raise its temperature to a set point for the length of the demand response event. These events may occur from June 1 through Sept. 30.

Benefits

- **Help prevent outages** by automatically reducing your energy use when electrical demand is high.
- **Earn cash incentives** when you enroll and by participating in events. If you already own an eligible device, all you have to do is sign up.
- **Do your part for the environment** by saving energy.

Who's eligible?

Entergy Arkansas commercial customers who own a business, have central air conditioners, have Wi-Fi and have a qualifying smart thermostat are eligible to participate.

Eligible smart thermostats

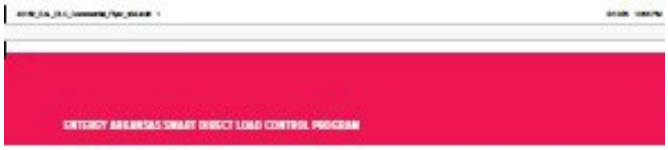
- Emerson Sensi Touch and Sensi Wi-Fi
- Honeywell Lyric T5, T5 Plus, T6, T9, T10, 9000 Smart, Wireless FocusPRO and Round Smart

How to enroll

To enroll your eligible thermostat or learn more, visit **entergyarkansas.com/thermostat** or call **833-807-7682**.

Enrollment incentive
Get **$100** for enrolling your qualifying smart thermostat.

Annual participation incentive
Get **$100** per thermostat enrolled for participating in demand response events.



FAQs

What are the advantages of a smart thermostat?
Smart thermostats save you energy all year long by learning how your business responds to weather conditions and adjusting the temperature. You can also access the thermostat from mobile devices or computers and receive reports about your business's energy usage and savings. Hello, convenience.

How does the smart thermostat work during demand response events?
On select days with high electrical demand, the thermostat's sensors will help manage your air conditioner's run times to save you energy, which is known as a demand response event. When a demand response event occurs, your thermostat will temporarily increase your temperature set point by up to four degrees to reduce energy usage. If the temperature in your business exceeds this set point, your air conditioner will turn on to keep you comfortable. Once the event is over, your thermostat will return to your regularly scheduled temperature.

When will my smart thermostat be affected?
Your smart thermostat will only be affected during demand response events. Outside of these times, you are free to set your thermostat to your desired schedule and temperature.

How often do demand response events occur?
The number of demand response events in any given year varies. Typically, they occur on a few hot or humid weekdays between June 1 and Sept. 30. Events are not activated on weekends or holidays.

How can I tell an event is occurring?
In most instances, you will receive a notification by email and on your thermostat the day prior to a scheduled event. Please note that in order to participate in demand response events and be eligible for your participation incentive, your thermostat must be online and connected.

Can I opt out of an event?
You can opt out of up to three events per year using your phone, tablet or thermostat. The system will monitor your opt-out activity. Once you have used your three opt-outs for the year, that option will no longer be available to you. For mandatory events, you must call **855-801-6768**.



Start saving

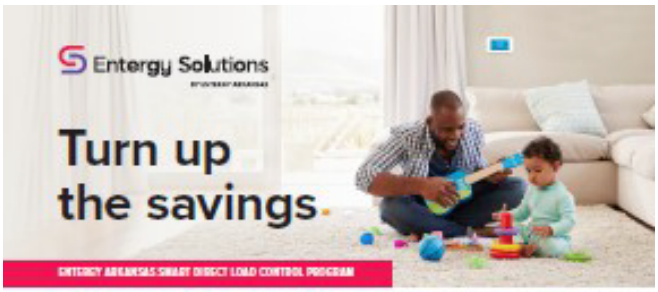
Save energy and earn cash incentives by enrolling your smart thermostat in the Smart Direct Load Control Program. Visit **entergyarkansas.com/thermostat**, call **833-807-7682** to enroll or scan the QR code.

Company Name
Phone Number
Email
Website

entergy

3.11.10 EAL_DLC_Residential_Standard_Flyer

Arkansas Public Service Commission: 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Enroll your smart thermostat in the Smart Direct Load Control Program and get up to $90

Entergy Arkansas is helping its residential customers save energy and money the smart way. Enroll your qualifying smart thermostat in our Smart Direct Load Control Program and earn incentives.

How it works

The Smart Direct Load Control Program helps reduce high energy demand in the summer, when tens of thousands of central air conditioners and heat pumps are all running at the same time, putting a strain on the power supply. **That's where you come in.**

On days when electricity demand is highest, we will automatically send a signal to your thermostat to raise its temperature to a set point for the length of the demand response event. These events may occur from June 1 through Sept. 30.

Benefits

- **Help prevent outages** by automatically reducing your energy use when electrical demand is high.
- **Earn cash incentives** when you enroll and annually for participation. If you already own an eligible device, all you have to do is sign up.
- **Do your part for the environment** by saving energy.

Who's eligible?

Entergy Arkansas residential customers who own a home, have central air conditioners, have Wi-Fi and have a qualifying smart thermostat are eligible to participate.

Eligible smart thermostats

- Emerson Sensi Touch and Sensi Wi-Fi
- Honeywell Lyric T5, T5 Plus, T6, T9, T10, 9000 Smart, Wireless FocusPRO and Round Smart

How to enroll

To enroll your eligible thermostat or learn more, visit **entergyarkansas.com/thermostat** or call **833-807-7682**.

Enrollment incentive

Get **$60** per thermostat for enrolling your qualifying smart thermostat.

Annual participation incentive

Get **up to $80** per thermostat **every year** for participating in demand response events. The more you participate, the more you earn.

ENTERGY ARKANSAS SMART DIRECT LOAD CONTROL PROGRAM

FAQs

What are the advantages of a smart thermostat?

Smart thermostats save you energy all year long by learning how your home responds to weather conditions and adjusting the temperature. You can also access the thermostat from mobile devices or computers and receive reports about your home's energy usage and savings. Hello, convenience.

How does the smart thermostat work during demand response events?

On select days with high electrical demand, the thermostat's sensors will help manage your air conditioner's run times to save you energy, which is known as a demand response event. When a demand response event occurs, your thermostat will temporarily increase your temperature set point by up to four degrees to reduce energy usage. If the temperature in your home exceeds this set point, your air conditioner will turn on to keep you comfortable. Once the event is over, your thermostat will return to your regularly scheduled temperature.

When will my smart thermostat be affected?

Your smart thermostat will only be affected during demand response events. Outside of these times, you are free to set your thermostat to your desired schedule and temperature.



"I was very satisfied with this program. I think all customers should get involved."

How often do demand response events occur?

The number of demand response events in any given year varies. Typically, they occur on a few hot or humid weekdays between June 1 and Sept. 30. Events are not activated on weekends or holidays.

How can I tell an event is occurring?

In most instances, you will receive a notification by email and on your thermostat the day prior to a scheduled event. Please note that in order to participate in demand response events and be eligible for your participation incentive, your thermostat must be online and connected.

Can I opt out of an event?

You can opt out of up to three events per year using your phone, tablet or thermostat. The system will monitor your opt out activity. Once you have used your three opt-outs for the year, that option will no longer be available to you. For mandatory events, you must call **855-801-5758**.

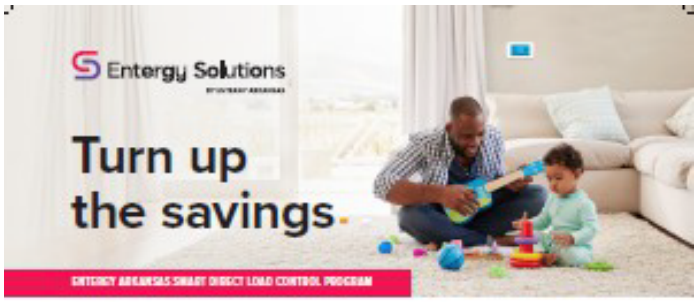
Start saving

Save energy and earn cash incentives by enrolling your smart thermostat in the Smart Direct Load Control Program. Visit **entergyarkansas.com/thermostat**, call **833-807-7682** to enroll or scan the QR code.

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3.11.11 EAL_DLC_Residential_Co-Branded_Flyer

Received: 5/1/2025 11:47:51 AM: Revised: 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



Enroll your smart thermostat in the Smart Direct Load Control Program and get up to $90

Entergy Arkansas is helping its residential customers save energy and money the smart way. Enroll your qualifying smart thermostat in our Smart Direct Load Control Program and earn incentives.

How it works

The Smart Direct Load Control Program helps reduce high energy demand in the summer, when tens of thousands of central air conditioners and heat pumps are all running at the same time, putting a strain on the power supply. **That's where you come in.**

On days when electricity demand is highest, we will automatically send a signal to your thermostat to raise its temperature to a set point for the length of the demand response event. These events may occur from June 1 through Sept. 30.

Benefits

- **Help prevent outages** by automatically reducing your energy use when electrical demand is high.
- **Earn cash incentives** when you enroll and annually for participation. If you already own an eligible device, all you have to do is sign up.
- **Do your part for the environment** by saving energy.

Who's eligible?

Entergy Arkansas residential customers who own a home, have central air conditioners, have Wi-Fi and have a qualifying smart thermostat are eligible to participate.

Eligible smart thermostats

- Emerson Sensi Touch and Sensi Wi-Fi
- Honeywell Lyric T5, T5 Plus, T6, T9, T10, 9000 Smart, Wireless Focus/RIO and Round Smart

How to enroll

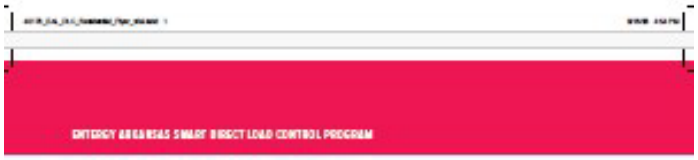
To enroll your eligible thermostat or learn more, visit **entergyarkansas.com/thermostat** or call **833-807-7682**.

Enrollment incentive

Get **$60** per thermostat for enrolling your qualifying smart thermostat.

Annual participation incentive

Get **up to $40** per thermostat **every year** for participating in demand response events. The more you participate, the more you earn.



FAQs

What are the advantages of a smart thermostat?

Smart thermostats save you energy all year long by learning how your home responds to weather conditions and adjusting the temperature. You can also access the thermostat from mobile devices or computers and receive reports about your home's energy usage and savings. Hello, convenience.

How does the smart thermostat work during demand response events?

On select days with high electrical demand, the thermostat's sensors will help manage your air conditioner's run times to save you energy, which is known as a demand response event. When a demand response event occurs, your thermostat will temporarily increase your temperature set point by up to four degrees to reduce energy usage. If the temperature in your home exceeds this set point, your air conditioner will turn on to keep you comfortable. Once the event is over, your thermostat will return to your regularly scheduled temperature.

When will my smart thermostat be affected?

Your smart thermostat will only be affected during demand response events. Outside of these times, you are free to set your thermostat to your desired schedule and temperature.



"I was very satisfied with this program. I think all customers should get involved."

—an actual Entergy Solutions customer

How often do demand response events occur?

The number of demand response events in any given year varies. Typically, they occur on a few hot or humid weekdays between June 1 and Sept. 30. Events are not activated on weekends or holidays.

How can I tell an event is occurring?

In most instances, you will receive a notification by email and on your thermostat the day prior to a scheduled event. Please note that in order to participate in demand response events and be eligible for your participation incentive, your thermostat must be online and connected.

Can I opt out of an event?

You can opt out of up to three events per year using your phone, tablet or thermostat. The system will monitor your opt-out activity. Once you have used your three opt-outs for the year, that option will no longer be available to you. For mandatory events, you must call **[illegible]**.

Start saving

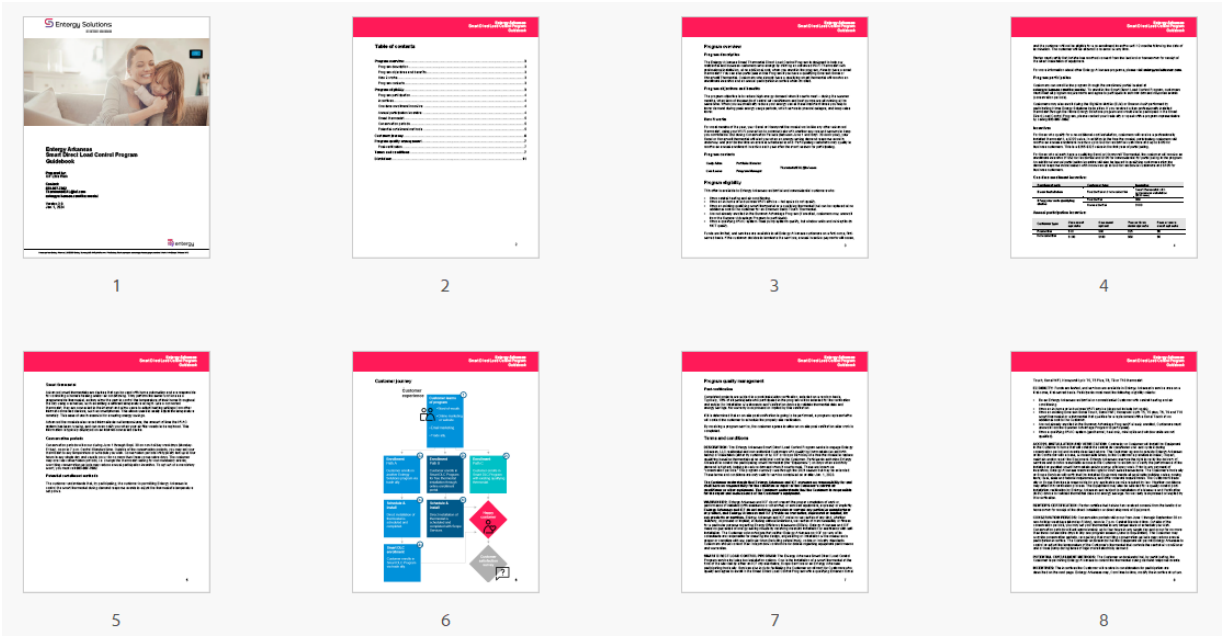
Save energy and earn cash incentives by enrolling your smart thermostat in the Smart Direct Load Control Program. Visit **entergyarkansas.com/thermostat**, call **833-807-7682** to enroll or scan the QR code.

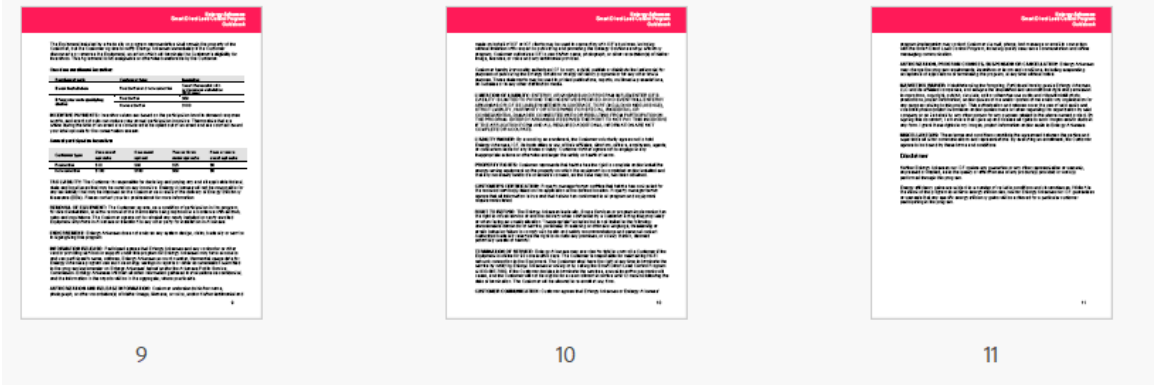
Company Name
Phone Number
Email
Website

entergy

APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

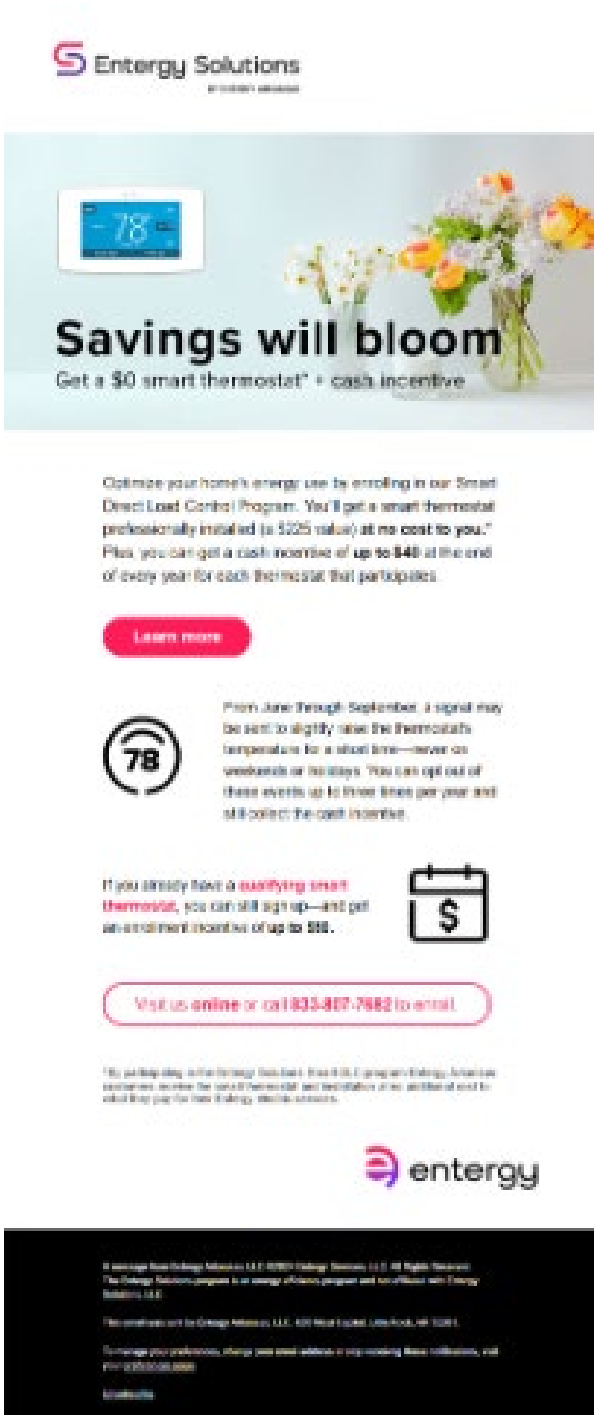
3.11.12 SDLC Guidebook 2024





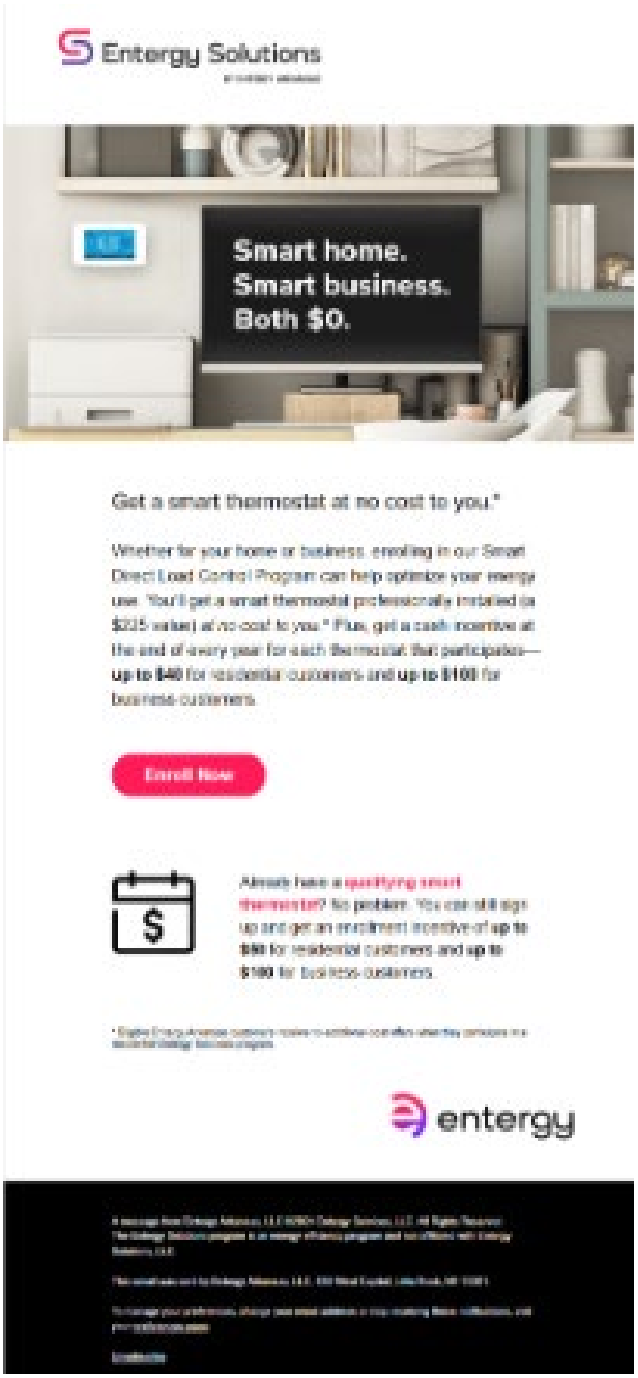
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.11.13 March DLC Res EAL Email



3.11.14 March DLC Res and Biz email

Received: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



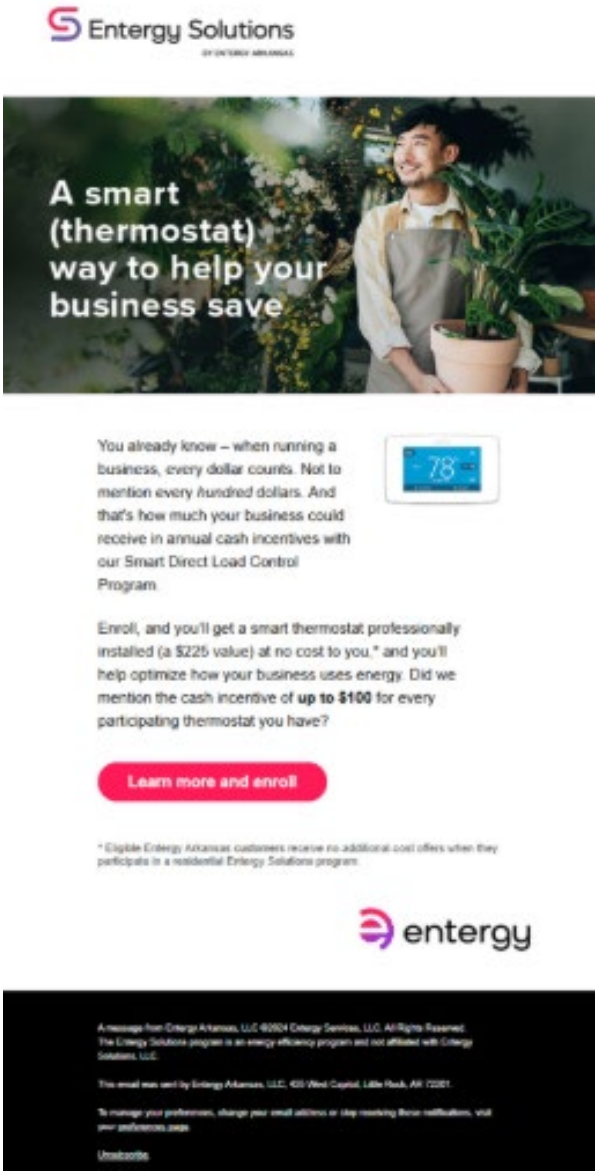
3.11.15 March DLC Biz email- Schools

ARSC Filing Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



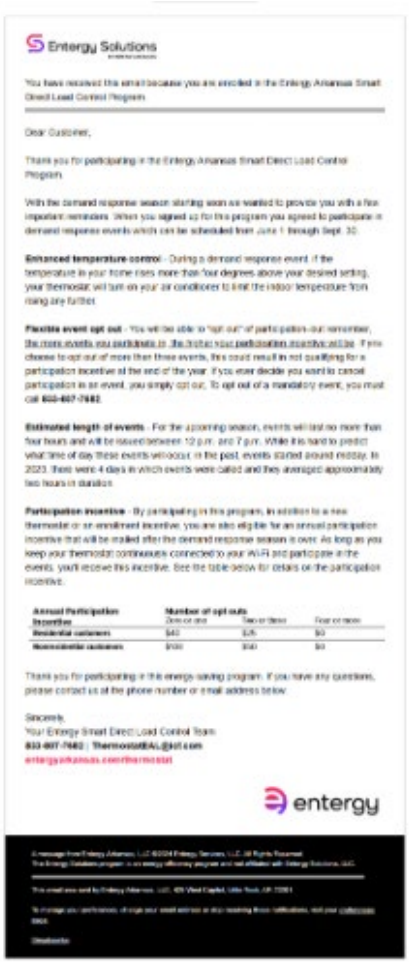
3.11.16 April EAL_DLC Business email

APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862



3.11.17 EAL DLC Preseason Email – Online/Offline Tstats

ARSC 8/15/2025 Time: 8/15/2025 11:55:28 AM: Received 8/15/2025 11:55:51 AM: Docket 07-085-TF-Doc. 862



Entergy Solutions

You have received this email because you are enrolled in the Entergy Arkansas Smart Direct Load Control Program.

Dear Customer,

Thank you for participating in the Entergy Arkansas Smart Direct Load Control Program.

With the demand response season starting soon we wanted to provide you with a few important reminders. When you signed up for this program you agreed to participate in demand response events which can be scheduled from June 1 through Sept. 30.

Enhanced temperature control - During a demand response event, if the temperature in your home rises more than four degrees above your desired setting, your thermostat will turn on your air conditioner to limit the indoor temperature from rising any further.

Flexible event opt out - You will be able to "opt out" of participation, but remember, the more events you participate in, the higher your participation incentive will be. If you choose to opt out of more than three events, this could result in not qualifying for a participation incentive at the end of the year. If you ever decide you want to cancel participation in an event, you simply opt out. To opt out of a mandatory event, you must call 833-807-7682.

Estimated length of events - For the upcoming season, events will last no more than four hours and will be issued between 12 p.m. and 7 p.m. While it is hard to predict what time of day these events will occur, in the past, events started around midday. In 2023, there were 4 days in which events were called and they averaged approximately two hours in duration.

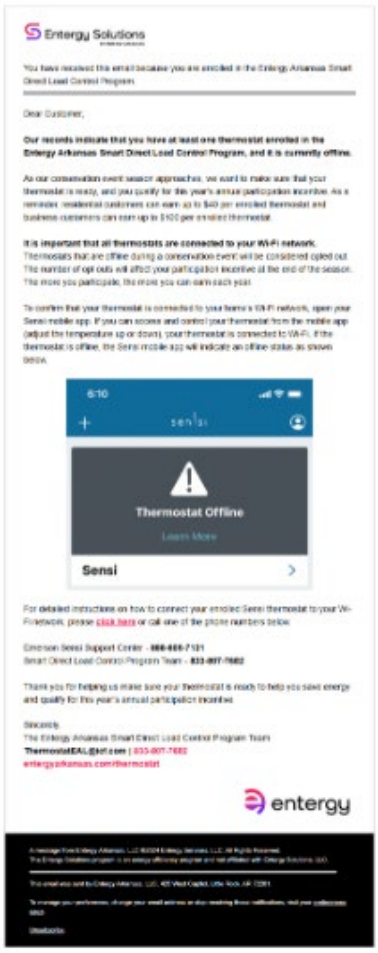
Participation incentive - By participating in this program, in addition to a new thermostat or an enrollment incentive, you are also eligible for an annual participation incentive that will be mailed after the demand response season is over. As long as you keep your thermostat continuously connected to your Wi-Fi and participate in the events, you'll receive this incentive. See the table below for details on the participation incentive.

Annual Participation Incentive	Number of opt outs		
	Zero or one	Two or three	Four or more
Residential customers	$40	$25	$0
Nonresidential customers	$100	$40	$0

Thank you for participating in this energy-saving program. If you have any questions, please contact us at the phone number or email address below.

Sincerely,
Your Entergy Smart Direct Load Control Team
833-807-7682 | ThermostatEAL@list.com
entergyarkansas.com/thermostat

entergy



Entergy Solutions

You have received this email because you are enrolled in the Entergy Arkansas Smart Direct Load Control Program.

Dear Customer,

Our records indicate that you have at least one thermostat enrolled in the Entergy Arkansas Smart Direct Load Control Program, and it is currently offline.

As our conservation event season approaches, we want to make sure that your thermostat is ready, and you qualify for this year's annual participation incentive. As a reminder, residential customers can earn up to $40 per enrolled thermostat and business customers can earn up to $100 per enrolled thermostat.

It is important that all thermostats are connected to your Wi-Fi network. Thermostats that are offline during a conservation event will be considered opted out. The number of opt outs will affect your participation incentive at the end of the season. The more you participate, the more you can earn each year.

To confirm that your thermostat is connected to your home's Wi-Fi network, open your Sensi mobile app. If you can access and control your thermostat from the mobile app (adjust the temperature up or down), your thermostat is connected to Wi-Fi. If the thermostat is offline, the Sensi mobile app will indicate an offline status as shown below.

For detailed instructions on how to connect your enrolled Sensi thermostat to your Wi-Fi network, please click here or call one of the phone numbers below.

Emerson Sensi Support Center - 888-606-7181
Smart Direct Load Control Program Team - 833-807-7682

Thank you for helping us make sure your thermostat is ready to help you save energy and qualify for this year's annual participation incentive.

Sincerely,
The Entergy Arkansas Smart Direct Load Control Program Team
ThermostatEAL@list.com | 833-807-7682
entergyarkansas.com/thermostat

entergy

3.11.18 June_EAL Biz and Res Email

ARSENAL ID Date: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

Entergy Solutions



Get a $0 smart thermostat for your home or business

Whether for your home, or your home away from home, enrolling in our Smart Direct Load Control Program may help optimize and reduce your energy usage. You'll get a smart thermostat professionally installed (a $225 value) at no cost to you.* On top of that, you'll get a cash incentive at the end of every year for each thermostat that participates—**up to $40** for residential customers and **up to $100** for business customers.

Enroll now

Already have a qualifying smart thermostat? You can still sign up and get an enrollment incentive of **up to $50** for residential customers and **up to $100** for business customers.

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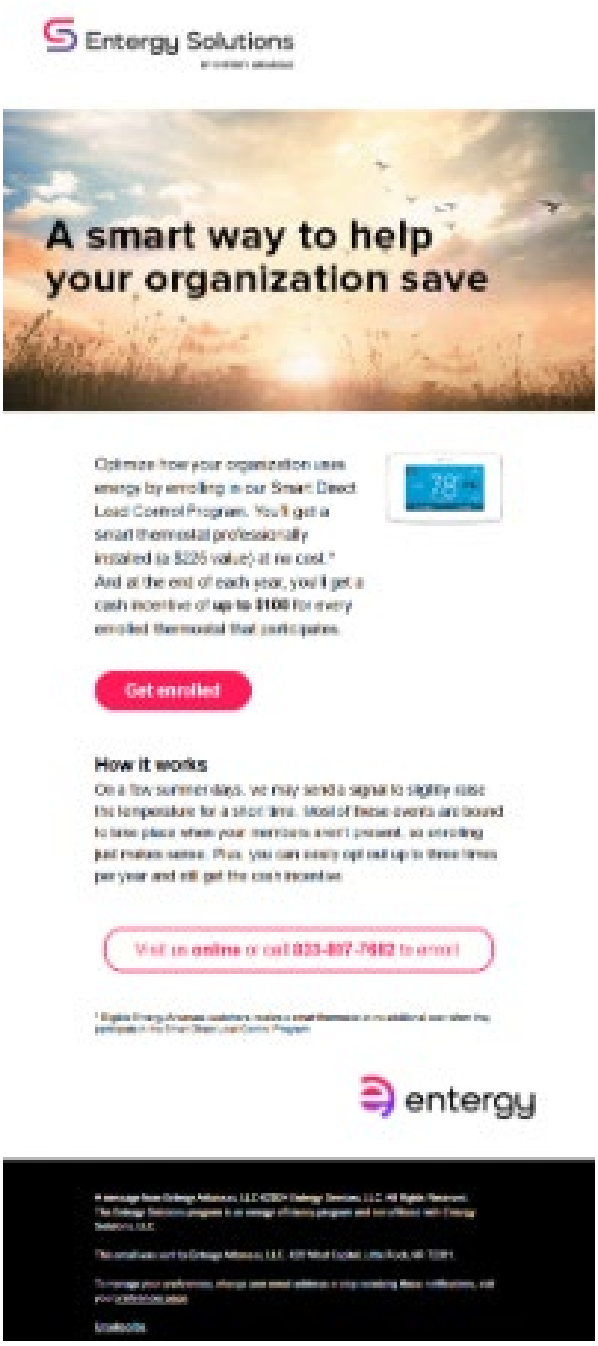
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.11.19 July DLC Residential Email



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3.11.20 August DLC Biz Email Religious Orgs



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3.11.21 August DLC Business Email



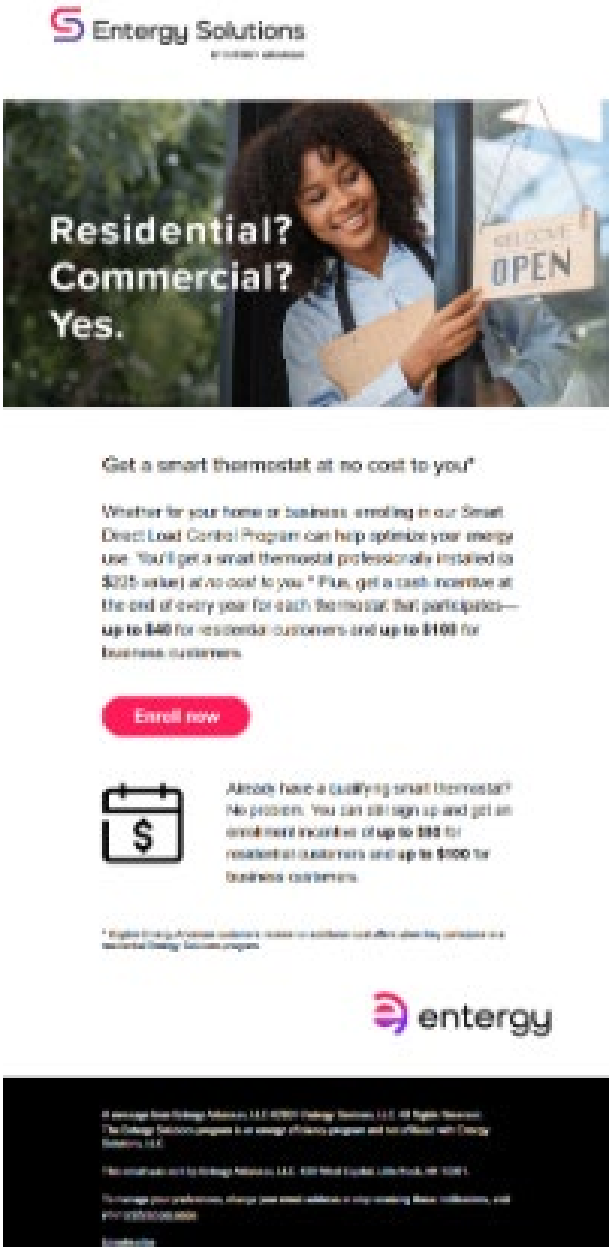
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3.11.22 August DLC Res Email



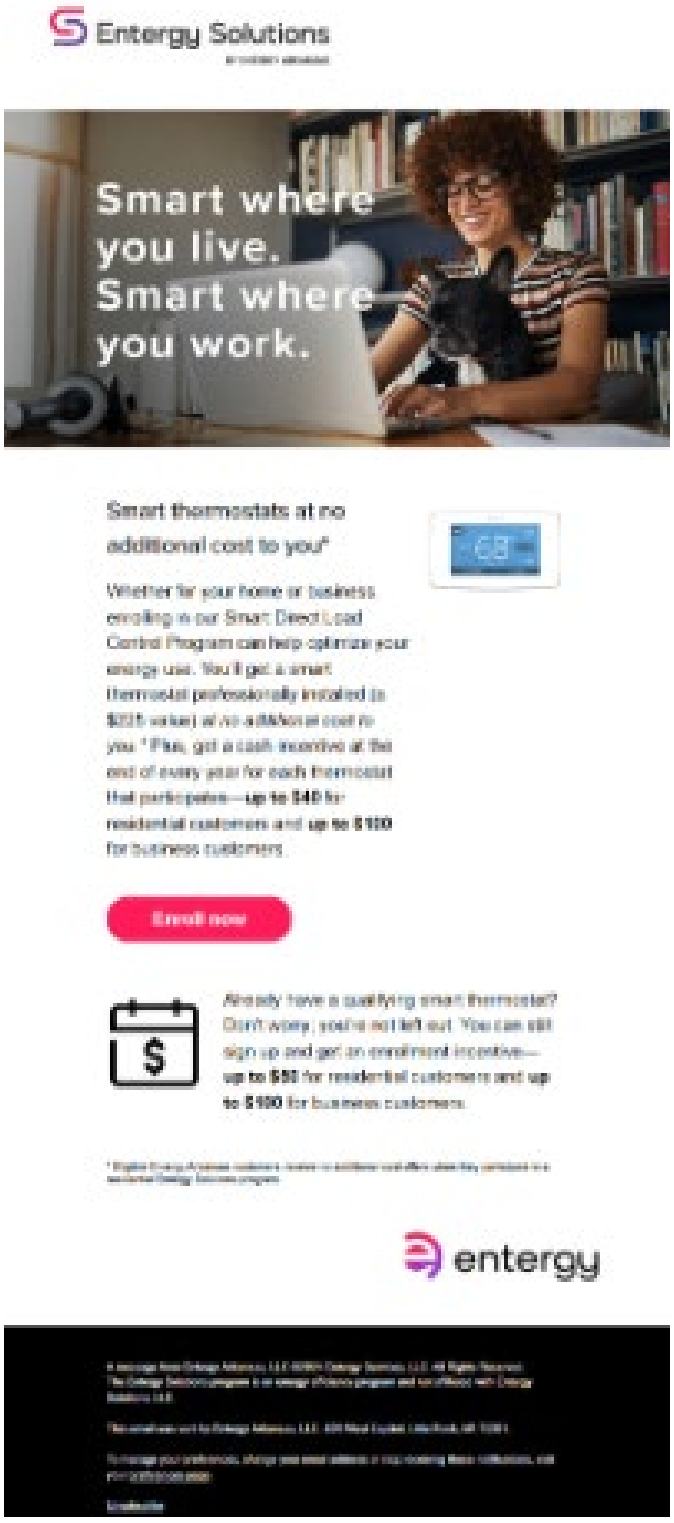
APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.11.23 September DLC Res and Biz email



APSC FILED Time: 5/1/2025 11:55:28 AM: Recvd 5/1/2025 11:47:51 AM: Docket 07-085-TF-Doc. 862

3.11.24 October DLC Res Email



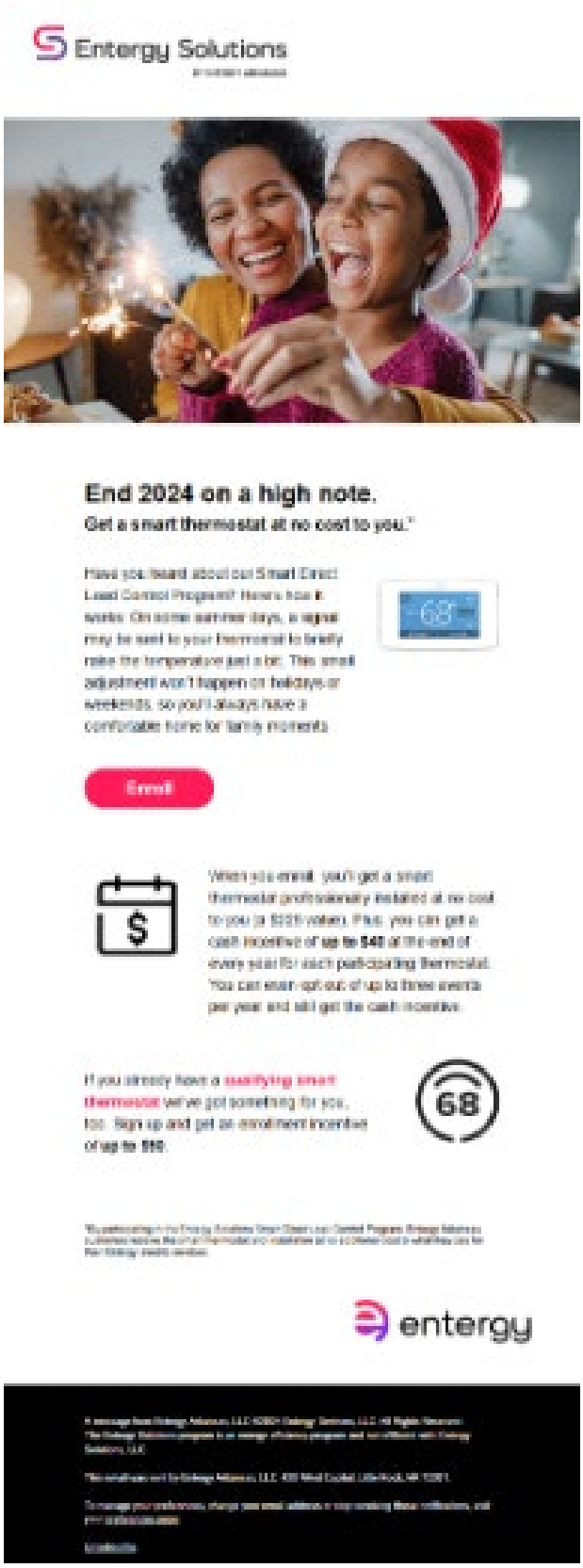
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3.11.25 DLC November Res Biz email



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3.11.26 December DLC Res Email



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3.11.27 EAL DLC Post Season Email 1

Entergy Solutions
BY ENTERGY ARKANSAS

You have received this email because you are enrolled in the Entergy Arkansas Smart Direct Load Control Program.

Thank you for enrolling in the Smart Direct Load Control Program. A total of four events were held this year, and your participation helped reduce energy demand on some of the hottest days during the summer.

Our records indicate that you opted out of four or more events, therefore, do not qualify for this year's annual participation incentive. As a reminder, incentive values are based on the participation level in demand response events, and event opt outs can reduce your annual participation incentive. Thermostats that are offline during the time of an event are considered to be opted out of an event and are counted toward your total opt outs for the conservation season.

Don't forget. Keeping your thermostat connected to Wi-Fi and participating in demand response events is an easy way for you to qualify for incentives at the end of next year's event season.

Annual Participation Incentive				
Customer Type	Incentive			
	Zero Event Opt Outs	One Event Opt Out	Two or Three Event Opt Outs	Four or More Event Opt Outs
Residential Customers	$60	$60	$25	$0
Nonresidential Customers	$100	$100	$50	$0

We invite you to provide feedback about your experience through our brief customer survey. The survey will take only a few minutes to complete, and your valuable response will help us improve the program.

Begin survey

Sincerely,
Your Entergy Smart Direct Load Control Team
ThermostatEAL@icf.com | 833-807-7682
entergyarkansas.com/thermostat

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To manage your preferences, change your email address or stop receiving these notifications, visit your preferences page.

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3.11.28 EAL DLC Post Season Email 2

Entergy Solutions
BY ENTERGY ARKANSAS

You have received this email because you are enrolled in the Entergy Arkansas Smart Direct Load Control Program.

Thank you for enrolling in the Smart Direct Load Control Program. A total of four events were held this year, and your participation helped reduce energy demand on some of the hottest days during the summer.

Incentive checks for participating in the 2023 event season will be mailed to you in four to six weeks. As a reminder, incentive values are based on the participation level in demand response events, and event opt outs can reduce your annual participation incentive. Thermostats that are offline during the time of an event are considered to be opted out of an event and are counted toward your total opt outs for the conservation season.

Annual Participation Incentive				
Customer Type	Incentive			
	Zero Event Opt Outs	One Event Opt Out	Two or Three Event Opt Outs	Four or More Event Opt Outs
Residential Customers	$40	$40	$25	$0
Nonresidential Customers	$100	$100	$50	$0

We invite you to provide feedback about your experience through our brief customer survey. The survey will take only a few minutes to complete, and your valuable response will help us improve the program.

Begin survey

Sincerely,
Your Entergy Smart Direct Load Control Team
ThermostatEAL@icf.com | 833-807-7682
entergyarkansas.com/thermostat

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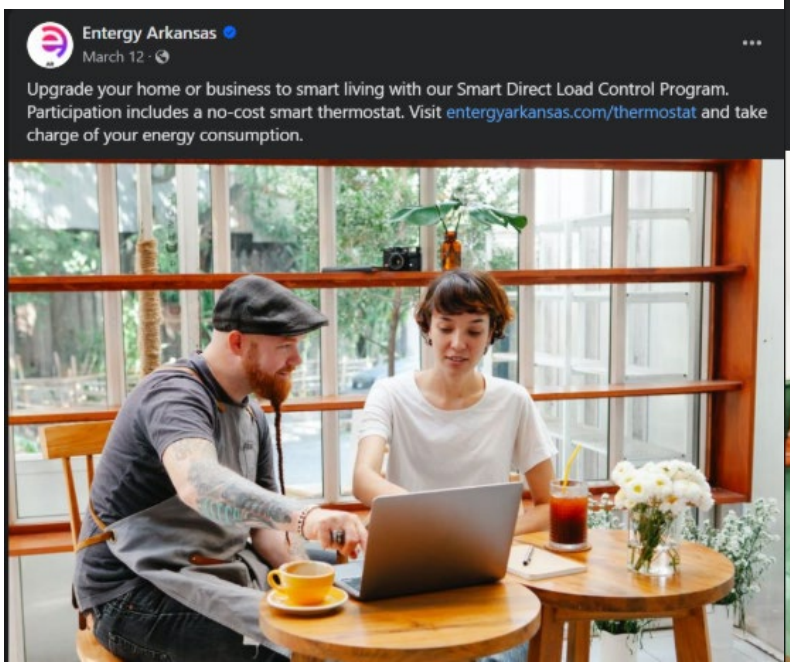
UNSUBSCRIBE

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3.11.29 SDLC Social Media 2024







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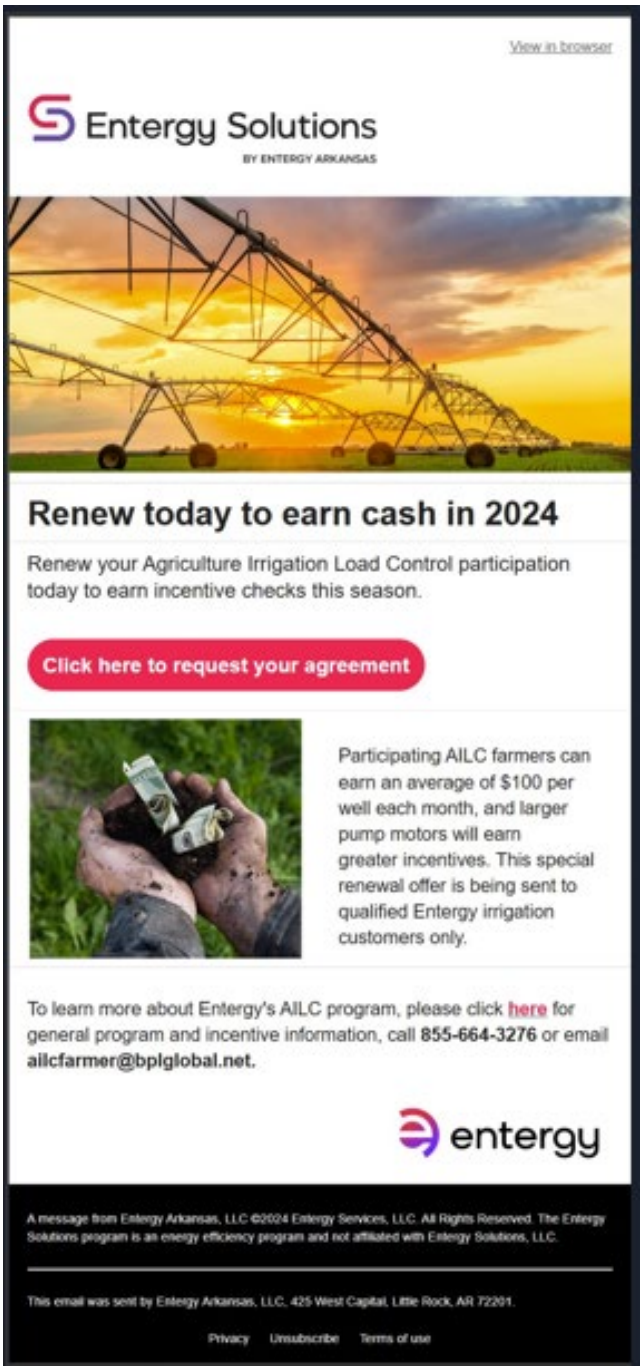




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3.12 Agricultural Irrigation Load Control

3.12.1 2024 AILC Renewal Email



View in browser

Entergy Solutions
BY ENTERGY ARKANSAS

Renew today to earn cash in 2024

Renew your Agriculture Irrigation Load Control participation today to earn incentive checks this season.

Click here to request your agreement

Participating AILC farmers can earn an average of $100 per well each month, and larger pump motors will earn greater incentives. This special renewal offer is being sent to qualified Entergy irrigation customers only.

To learn more about Entergy's AILC program, please click here for general program and incentive information, call **855-664-3276** or email **ailcfarmer@bplglobal.net.**

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This email was sent by Entergy Arkansas, LLC, 425 West Capital, Little Rock, AR 72201.

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3.12.2 2024 AILC Incentive Letter FINAL – June

Santiago Asimbaya
Program Manager
501-377-3512 | sasimba@entergy.com

Dear AILC Participant:

We are pleased to provide the attached incentive check to you for your farm's participation in the Entergy Arkansas 2024 Agricultural Irrigation Load Control Program during the month of June.

As the program agreement outlined, the June incentive payment was based on the number of your participating pumps in the program as of the end of the month, the run-time of the pumps during the month and the motor size of each pump. Each participating pump had to have a minimum run-time of 64 hours in the month to qualify for an incentive.

To review the incentive schedule, visit:

entergyarkansas.com/irrigation

Thanks again for your participation in this valuable program.

Sincerely,

Santiago Asimbaya
Entergy Arkansas, LLC

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3.12.3 AILC Incentive Letter FINAL – July



entergy

Santiago Asimbaya
Program Manager
501-377-3512 | sasimba@entergy.com

Dear AILC Participant:

We are pleased to provide the attached incentive check to you for your farm's participation in the Entergy Arkansas 2024 Agricultural Irrigation Load Control Program during the month of July.

As the program agreement outlined, the July incentive payment was based on the number of your participating pumps in the program as of the end of the month, the run-time of the pumps during the month and the motor size of each pump. Each participating pump had to have a minimum run-time of 64 hours in the month to qualify for an incentive.

To review the incentive schedule, visit:

entergyarkansas.com/irrigation

Thanks again for your participation in this valuable program.

Sincerely,

Santiago Asimbaya
Entergy Arkansas, LLC

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3.12.4 AILC Incentive Letter – August



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Santiago Asimbaya
Program Manager
501-377-3512 | sasimba@entergy.com

Dear AILC Participant:

We are pleased to provide the attached incentive check to you for your farm's participation in the Entergy Arkansas 2024 Agricultural Irrigation Load Control Program during the month of August.

As the program agreement outlined, the August incentive payment was based on the number of your participating pumps in the program as of the end of the month, the run-time of the pumps during the month and the motor size of each pump. Each participating pump had to have a minimum run-time of 64 hours in the month to qualify for an incentive.

To review the incentive schedule, visit:

entergyarkansas.com/irrigation

Thanks again for your participation in this valuable program.

Sincerely,

Santiago Asimbaya
Entergy Arkansas, LLC

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3.12.5 AILC Terms and Conditions FINAL V.0.pdf

Entergy Arkansas LLC Agricultural Irrigation Load Control Program
Terms and Conditions

Program Eligibility
To participate in the Agricultural Irrigation Load Control (AILC) program, participants must have 1) An active non-residential account in good standing with Entergy Arkansas LLC; 2) Authorization to modify existing motor configuration 3) A motor size of at least 10 HP, which is the minimum size to participate in the program 4) Accessible motor control panels capable of accommodating program equipment.

Program Incentives
Participating customers may qualify to receive a monthly rebate incentive for the program months of June, July and/or August. The incentive will be paid for each month of active participation regardless of whether any curtailment events were called in that month. Incentive levels will vary by motor size. Entergy Arkansas LLC anticipates the average incentive to be $100 per month for June, July and August, and the incentive level is described in the Table below:

	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 6	Tier 7	Tier 8	Tier 9
Motor HP	10-25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	*Larger*
Monthly Incentive*	$ 50.00	$ 100.00	$ 200.00	$ 250.00	$ 350.00	$ 450.00	$ 550.00	$ 650.00	*Upon Request*
**Incentive void if a participant's actions interfere with a curtailment event. A minimum of 64 run-time hours for a pump is required during the program calendar months of June, July and/or August to qualify for a rebate incentive payment for that month.*									

If a participant chooses to opt out of the program *during a curtailment event*, the participant forfeits that month's incentive. Active participation is defined as 1) A participant must have an active, non-delinquent, non-residential Entergy Arkansas LLC account 2) The participating account must be equipped with AILC control equipment except where Entergy Arkansas LLC has failed to install equipment through no fault of the participant. 3) The enrolled motor must be available for curtailment during the designated program hours. Only the motor's ability to be activated remotely is required to participate the motor is not required to be on for the motor to be considered available. 4) A minimum of 64 run-time hours during the program month is required. This is equivalent to running the motor 16 hours a day for four times during the month.

Enrollment
The new enrollment and account renewal period is from October 1, 2023 through August 15, 2024 (or until all of the required enrollments for that program season are received). Eligible customers must furnish Entergy Arkansas LLC written or electronic consent for the installation of the control device. If the participation response is greater than anticipated, Entergy Arkansas LLC will establish a waiting list for program participation for the following program year.

Equipment Installation and Maintenance
BPL Global LLC, d/b/a Connected Energy, Entergy Arkansas LLC's implementing contractor, will coordinate the installation of all program equipment. The equipment will be tested for operability during the installation process. This testing may require the motor to be turned off and on via the controller unit, which utilizes cellular technology. The unit will also be tested to ensure the unit is reporting the correct load after installation. Please note that once the installation is complete, it may take as much as 24 hours for the motor and controller to be operated remotely through the participant web-portal (in most cases the availability will be a matter of minutes).

All program equipment remains property of the AILC program, and any maintenance issues should be reported to the Entergy Arkansas LLC Irrigation Desk at 1-800-324-4709 or Entergy Outage at 1-800-9OUTAGE. For specific controller questions or to gain farmer portal access, participants may call Connected Energy's farmer help line at 1-855-864-FARM (3276). The participant agrees to allow Entergy Arkansas LLC representatives to have access to the pumping unit for the purpose of installing, testing and maintaining the remote control device at all times.

Equipment Operations and Remote Access
After the AILC equipment has been installed, the participant may operate the pump motor as normal. The controller is wired to turn the motor on or off remotely but will not interfere with manual operation. The controller is equipped with an amber LED indicator. When the amber LED is on, a curtailment event is in effect. During a curtailment event, the motor is de-energized and the motor will not operate. To operate the pump remotely, the participant must register in the AILC website (https://etr-fp.cnrg.com/). Once registered, the participating wells will be displayed along with their current availability, run status and load. If the motor is on, a history of the load in kW is recorded and displayed. If the motor is available, the motor can be turned on, or if it is already turned on, it may be turned off. As a precaution against motor damage, the start function will be temporarily locked out for six (6) minutes after the motor has been turned off. Remote operations of the pump(s) will not be accessible during any AILC curtailment.

Curtailment Events
Entergy Arkansas LLC may conduct test curtailments during the equipment's installation to test the communications and operations. Other test curtailments may occur as required. The AILC program will only curtail the participating irrigation loads from June 1 through August 31. Except in cases of emergency, the curtailments may only be scheduled on weekdays for a total of up to four hours (not counting an up to 15-minute ramp-up window) and be limited to occur between 12 p.m. noon and 9 p.m.. Additionally, Entergy Arkansas LLC will limit planned curtailment events to no more than two events in one calendar week. Emergency Events may occur at any time from June 1 to August 31 regardless of program limitations. Before a curtailment event, the participant will receive an e-mail or text message notifying him or her of an upcoming curtailment. The message will include the duration of the curtailment as long as curtailment notification is selected during the enrollment process. Remote operations of the pump(s) will not be accessible during any AILC curtailment.

Renewals, Termination or Expulsion
Enrollment starts October 1, 2023 and continues through August 15, 2024 (or until all of the required enrollments for that season are received). Participation in this program shall be from the date of successful equipment installation or June 1, 2024, whichever is later, to August 31, 2024 and shall be automatically renewed for successive peak seasons in succeeding years unless terminated by the participant. If participants find they cannot continue or do not wish to continue participation in the program, participants may opt out or discontinue participation by forfeiting any pending monthly incentives. Participants may opt-out and re-enroll in the program at any time prior to June 1, 2024. After June 1, a participant may opt-out of the program; however, his or her re-enrollment into the program will be considered on a case-by-case basis. Allowable mid-season re-enrollment examples would be administrative error, change of pump ownership or management, account activation or de-activation, and pump motor modifications. Unless equipment removal is requested, opting out of the program will initiate field services to place the load control box on "by-pass" mode. This will allow the opt-out customer to experience uninterrupted service and allow future participation without additional service calls for equipment installation. If there is evidence of alteration or tampering with the AILC program's control equipment, the participant will reimburse Entergy Arkansas LLC for repair costs. Furthermore, if Entergy Arkansas LLC considers the tampering to be recurrent or malicious, Entergy Arkansas LLC may cancel participation in this program, nullify any pending incentives, remove its control device and bill the participant the removal costs of $1,950.00.

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3.12.6 AILC Program Agreement

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ENTERGY ARKANSAS AILC PROGRAM NEW OR RENEWAL ENROLLMENT

Entergy Arkansas, LLC
Agricultural Irrigation Load Control Program Confirmation Agreement

*Attention customer: Based on our information, the wells listed below are eligible to be enrolled or renewed in Entergy's Agricultural Irrigation Load Control program. If you have questions about the AILC program or the wells listed, please call **855-664-3276** for further assistance.*

Customer or Farm Name BORING FARMS
Entergy BP#: 698899
Well(s) for AILC program enrollment or renewal: WELL 134567 WELL 234987 WELL 154665
ESign:_____DATE: _____ Name: *Your electronic signature indicates that you agree with the Entergy AILC program Terms and Conditions (document included) and agree to use an electronic signature.*

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3.12.7 AILC Flyer Overview and FAQ



Save time and earn cash by enrolling now

Your large motor wells receive large checks.

Monthly cashback incentives

Motor Horsepower	10-25	26-50	51-75	76-100	101-125	126-150	151-175	176-200	Larger HP
Monthly Incentive*	$50	$100	$200	$250	$350	$450	$550	$650	Upon Request

*Incentives void if customer actions interfere with an event. Minimum of 64 hours of monthly runtime required during AILC Program months.

- The Agricultural Irrigation Load Control (AILC) Program period is June 1 through August 31.
- The program is available to all Entergy Arkansas customers taking service under the Agricultural Pumping Service rate schedule.
- There are no installation fees.
- You will have remote access to your wells throughout the growing season, not just during the program period. Pumps are controlled using wireless signals.
- During the program period, Entergy Arkansas might need to interrupt the electric service to the pump for no more than four hours each weekday, Monday through Friday, between the hours of noon and 9 p.m., excluding holidays.*
- Cashback is mailed approximately two weeks following end of month.
- Maximum irrigation loads and air conditioning loads coincide on hot summer afternoons and place the greatest demand on electricity resources that serve you. This program helps to reduce some of that demand for the benefit of all customers.
- Entergy Arkansas enables farmers to remotely operate wells enrolled in the Agricultural Irrigation Load Control Program year-round from your laptop, tablet or smartphone. Now, you can turn your compatible wells on or off from home, in town or in the field anytime of the day or night.

Program benefits

- Cashback is mailed approximately two weeks following end of month – an average of $100 per pump, per month for the AILC Program months of June, July and August.
- Operate wells from anywhere, anytime with a laptop, tablet or smartphone. There is no more need to drive from well to well in the middle of the night just to turn them on or off.
- You will receive advance notifications from Entergy Arkansas when wells will be turned off or on.
- Save an average of $350 per pump per month in June, July and August on your motors between 100-150hp. Larger motors will qualify for larger monthly incentives.

In certain emergency situations, Entergy Arkansas could be required to curtail service to preserve system integrity. For details, visit us online.

Sign up some or all of your pumps

Program participation is limited, so reserve your place today to be eligible for seasonal monthly incentives.
Call 855-664-FARM (3276) or email farmers@entergy.com now to get more information.
Also visit entergyarkansas.com/irrigation.

Frequently asked questions

For complete details, visit our website at entergyarkansas.com/irrigation.

How is the payment calculated?

The payment is based on rated horsepower of the pump motors in the program. At the end of each month, rebate incentives earned for the total number of pumps enrolled for the entire month are calculated. Entergy Arkansas' program agent will send you a check within about two weeks.

How does the remote switching work?

Farmers participating in the AILC Program can use the same technology Entergy Arkansas uses to remotely control their irrigation wells. Farmers will have access to a secure website where they can register any qualified, participating and active irrigation well for remote control by a laptop, tablet or smartphone. Please note: remote control access will not be available during the hours of load control interruption. Otherwise, you can manage your wells' operation at any time during the growing season.

Why is Entergy Arkansas offering this program?

We want to help customers save money and also reduce the total peak load – the amount of electricity required to serve all our customers during the weekday periods of summer afternoons. As seen in previous years, reducing peak load benefits all of our customers.

Are there any installation fees?

There are no installation fees. To participate, you must allow Entergy Arkansas contractors access to the motor control panel.

Have participating farmers been satisfied with your program?

Yes. Of the farmers polled at the end of the 2022 season, nearly 80% expressed satisfaction in the overall program. 91% of the 2022 respondents plan to stay in the program.

What happens if I choose to terminate the program before the three months are over?

You may end your participation for a specific well or for all of your wells by calling us at 855-664-FARM (3276). But if you do, you will not receive a payment for the month in which you terminate or any subsequent month.

What if something goes wrong with the meter or the switching controls?

Installation and maintenance are Entergy Arkansas' responsibility. During business hours, call 855-664-FARM (3276). During nights, weekends and holidays, call 800-90UTAGE (800-968-8243).

We make it simple to participate

To participate in the AILC Program, you must agree to allow Entergy Arkansas to:

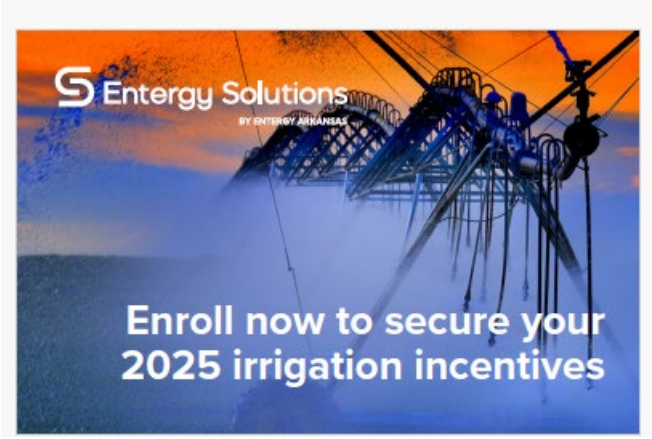
- Install a load control device on your pump, which will turn the power off and on to the pump. There is no installation fee for these devices.
- Allow us to turn off the pump for up to four hours per day, Monday through Friday, anytime between the hours of noon and 9 p.m., excluding holidays. Pumps will be turned off and on remotely by a two-way communication system.
- Upon request, we will send you texts or emails to let you know when the well will be turned off and when the pump is available again after the interruption.
- You can opt out of the AILC Program anytime during June, July or August. You may end your participation for a specific well or for all of your wells by calling 855-664-FARM (3276). But if you do, your pumps will be ineligible for an incentive payment for the month in which you terminate and all subsequent AILC Program months.

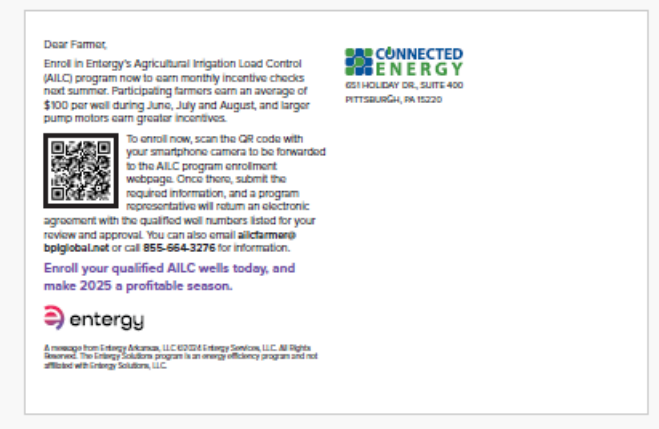
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3.12.8 AILC Reenrollment Postcard Fall 2024





Dear Farmer,

Enroll in Entergy's Agricultural Irrigation Load Control (AILC) program now to earn monthly incentive checks next summer. Participating farmers earn an average of $100 per well during June, July and August, and larger pump motors earn greater incentives.

To enroll now, scan the QR code with your smartphone camera to be forwarded to the AILC program enrollment webpage. Once there, submit the required information, and a program representative will return an electronic agreement with the qualified well numbers listed for your review and approval. You can also email **ailcfarmer@bplglobal.net** or call **855-664-3276** for information.

Enroll your qualified AILC wells today, and make 2025 a profitable season.

entergy

CONNECTED ENERGY
651 HOLIDAY DR., SUITE 400
PITTSBURGH, PA 15220

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3.12.9 AILC Recruitment email 2024



view in browser

Entergy Solutions
BY ENTERGY ARKANSAS

Enroll now to secure your 2025 irrigation incentives

Click here to turn energy efficiency into savings

Participating AILC farmers can earn an average of $100 per enrolled pump during June, July and August, with larger pump motors qualifying for even greater incentives.

To learn more about how much you can save with Entergy's Agricultural Irrigation Load Control program, click here for general program and incentive information, call 855-664-FARM (3276) or email ailcfarmer@bplglobal.net.

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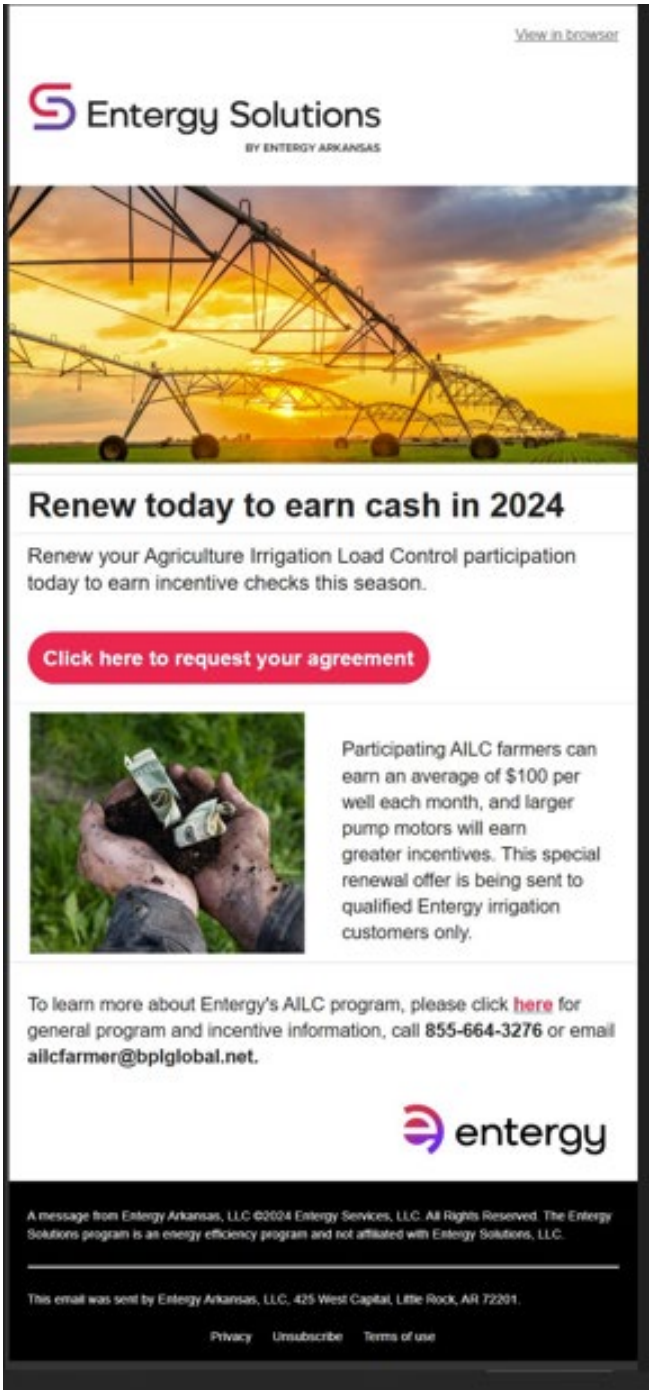
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3.12.10 AILC Renewal Email 2024



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Entergy Solutions
BY ENTERGY ARKANSAS

Renew today to earn cash in 2024

Renew your Agriculture Irrigation Load Control participation today to earn incentive checks this season.

Click here to request your agreement

Participating AILC farmers can earn an average of $100 per well each month, and larger pump motors will earn greater incentives. This special renewal offer is being sent to qualified Entergy irrigation customers only.

To learn more about Entergy's AILC program, please click here for general program and incentive information, call **855-664-3276** or email **ailcfarmer@bplglobal.net.**

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