



Liberty
602 S. Joplin Ave
P.O. Box 127
Joplin, Missouri 64802
417-625-5100
libertyenergyandwater.com

May 1, 2025

Arkansas Public Service
Commission 1000 Center Street
PO Box 400
Little Rock, AR 72203-0400

Re: Docket No. 07-076-TF
Annual SARP Filing

The Empire District Electric Company hereby submits its Standardized Annual Report Packet for 2024 for filing in the above-referenced docket.

If you have any questions about the filing, please do not hesitate to contact the undersigned.

Thank you for your assistance with this matter.

Sincerely,

Kimberly Dragoo

Kimberly Dragoo
Director Key Accounts and Energy Programs

THE EMPIRE DISTRICT ELECTRIC COMPANY
ENERGY EFFICIENCY ANNUAL REPORT
Filed May 1, 2025

1.0 EXECUTIVE SUMMARY

1.1 Brief historical background of the EE portfolio

The Empire District Electric Company (“Liberty” or “Company”) began its Quick Start Energy Efficiency (“EE”) portfolio in 2007 as directed by the Arkansas Public Service Commission’s (“Commission” or “APSC”) Rules for Conservation and Energy Efficiency Programs approved in Order No. 18 of Docket No. 06-004-R. This initial portfolio consisted of participation in the two state-wide programs, Energy Efficiency Arkansas (“EEA”) and the Arkansas Weatherization Program (“AWP”). Liberty also implemented a Central Air Conditioner (“CAC”) Tune-up rebate program and Commercial & Industrial (“C&I”) Prescriptive rebate program.

In 2010, the Commission approved the addition of a high-efficiency central air conditioner replacement component to the existing CAC tune-up rebate program, along with a rebate for a programmable thermostat. The Commission also approved the Interruptible Program, a voluntary curtailment program for large commercial and industrial customers.

In the spring of 2011, Liberty filed for approval of a High-efficiency Residential Lighting Program and a Home Energy Comparison Program to supplement its portfolio. However, in July 2011 the Commission requested Liberty re-file its portfolio to incorporate data for the 2012 and 2013 program years. During this time, Liberty, with the help of its demand-side consultant Applied Energy Group (AEG), decided to completely overhaul the existing portfolio to increase customer participation and overall savings levels. As a result of the Commission’s order and Liberty’s new portfolio expansion, the primary focus was dedicated to the new portfolio and the September 2011 filing deadline. The new portfolio was filed in September 2011. The new portfolio became active on January 1, 2012. It excluded the AC tune-up program and added a Residential Lighting Program, C&I Custom program, Energy Star® Appliance Program, and Small Business Lighting Program.

On December 28, 2012, Liberty filed with the APSC to add two new programs: Residential AC Tune-up and Duct Repair and an independent, contractor-driven Residential Weatherization. These programs leverage the design and contractors of a similar program designed and successfully implemented by Oklahoma Gas & Electric (“OG&E”). These programs were funded using re-appropriated budgets from underperforming programs in Liberty’s Arkansas EE portfolio.

In 2016, Liberty filed a new energy efficiency portfolio for 2017-2019. This new portfolio sought to streamline the inefficiencies and alleviate the program’s shortcomings. The new portfolio focused on eliminating underperforming programs and focusing on programs with proven success. In doing so, it also set budgets at a reasonably achievable level, which helped abate Liberty’s potential for over-recovering the costs associated with these programs.

In 2019, Liberty filed a new energy efficiency portfolio for 2020-2022. The new portfolio initially featured the reluctant discontinuation of the Weatherization Program, which was not found to be cost-effective in the initial analysis. The portfolio without the Weatherization Program was approved for 2020; alongside a request that Liberty sought through Independent Evaluation Monitor (“IEM”) and Parties Working Collaboratively (“PWC”) to integrate new variables for cost-effectiveness within its

analysis of the Weatherization program. This modification pushed the Weatherization program into cost-effectiveness, and the addition of this program was approved to be reintroduced for 2021 and 2022. In 2022, this portfolio was extended through 2023.

Liberty submitted a new energy efficiency portfolio for 2024 – 2026 approved by the commission on November 9, 2023, in in Docket 07-076 Order No. 96. This portfolio consists of four programs including, Residential Products, School-Based Energy Education, Residential Weatherization and the C&I Rebate program. This annual report provides the portfolio results for the 2024 program year.

Table 1.1

2024 Portfolio Summary							
Net Energy Savings		Costs			Cost-Effectiveness		
Demand MW	Energy MWh	Actual Expenditures	LCFC	Performance Incentives	TRC Net Benefits (NPV)	TRC Ratio	PAC Ratio
0	37	\$ 24,922	\$ 3,384	N/A	\$ (16)	0.31	1.28

1.2 2024 Portfolio Overview

For the 2024 energy efficiency portfolio, Liberty planned for annual estimated energy savings of 218 MWh and for annual estimated demand savings of 44 kW. In 2024, Liberty’s portfolio captured 37 MWh of energy savings and demand savings of less than 1 MWh which is rounded down in the SARP workbook to 0. This is a significant decrease over 2023 residential savings primarily attributable to a shift away from the residential lighting program. The portfolio did see increased performance in the weatherization program and limited participation in the redefined residential product program. The portfolio continues to struggle to bring commercial and industrial projects.

Table 1.2

EE Portfolio Expenditures by Program					
Program Name	Target Sector	Program Type	2024		% of Budget
			Budget (\$)	Actual (\$)	
Residential Products	Residential	Consumer Product Rebate	39,885	1,300	3%
School-Based Energy Education	Residential	Consumer Product Rebate	16,250	12,083	74%
Weatherization	Residential	Whole Home	24,454	7,151	29%
Commercial and Industrial (Custom)	Commercial & Industrial	Custom	5,812	-	0%
Commercial and Industrial (Prescriptive)	Commercial & Industrial	Prescriptive/Standard Offer	5,000	-	0%
Administration	All Classes	Other	10,000	-	0%
Marketing	All Classes	Other	1,400	209	15%
Regulatory	-	-	3,000	1,679	56%
		Total	112,301	24,922	22%

1.3 2024 Goals and Objectives

For the 2024 energy efficiency portfolio, Liberty planned for annual estimated energy savings of 218 MWh and for annual estimated demand savings of 44 kW.

Table 1.3

EE Portfolio Expenditure Summary by Cost Type				
Cost Type	2024 Total Expenditures			
	% of Total	Budget (\$)	Actual (\$)	% of Total
Planning / Design	0%	-	-	0%
Marketing & Delivery	5%	5,400	209	1%
Incentives / Direct Install Costs	81%	91,401	20,534	82%
EM&V	2%	2,500	2,500	10%
Administration	9%	10,000	-	0%
Regulatory	3%	3,000	1,679	7%
	100%	112,301	24,922	100%

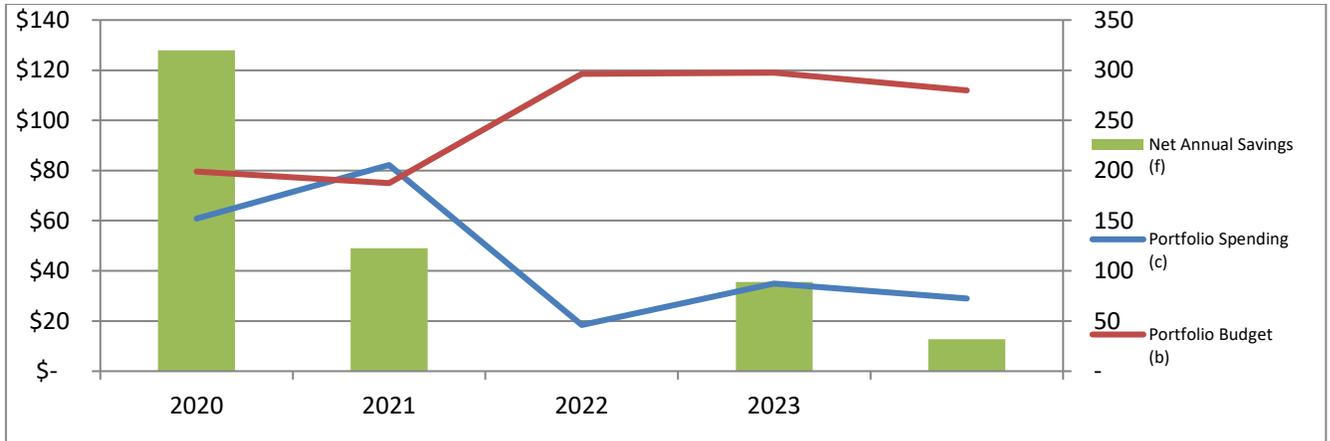
1.4 Progress achieved versus goals and objectives

Over the past decade, participation in the Liberty energy efficiency program has varied. The strongest residential participation came in years where the portfolio supported lighting giveaways. The commercial programs have typically only seen sporadic participation since the portfolio’s inception. For 2024, the overall portfolio budget was \$109,301 plus a \$3,000 allocation for regulatory expenses. While Liberty spent 22% of the overall budget, 82% of the spend went directly to customers in the form of a rebate or direct install measure. A majority the savings and spending came from the school-based education program with limited participation in the new residential products program and weatherization. Many of the difficulties of operating in this service territory are documents in Section 1.6 – *What’s Working and What’s Not*.

Table 1.4

Company Statistics										
Program Year	Revenue and Expenditures					Energy				
	Total Revenue (a) (\$000's)	Budget		Actual		Total Annual Energy Sales (d) (MWh)	Plan		Evaluated	
		Portfolio Budget (b) (\$000's)	% of Revenue (% = b/a)	Portfolio Spending (c) (\$000's)	% of Revenue (% = c/a)		Net Annual Savings (e) (MWh)	% of Energy Sales (% = e/d)	Net Annual Savings (f) (MWh)	% of Energy Sales (% = f/d)
2020	\$ 15,625	\$ 80	0.5%	\$ 61	0.4%	175,461	229	0.13%	320	0.18%
2021	\$ 15,846	\$ 75	0.5%	\$ 82	0.5%	164,927	419	0.25%	123	0.07%
2022	\$ 17,798	\$ 119	0.7%	\$ 18	0.1%	169,635	419	0.25%	-	0.00%
2023	\$ 22,288	\$ 119	0.5%	\$ 35	0.2%	172,735	311	0.18%	89	0.05%
2024	\$ 17,828	\$ 112	0.6%	\$ 29	0.2%	178,053	218	0.12%	37	0.02%

Chart 1.4



Liberty continued to see underspending in 2024. Liberty is encouraged by the participation in the new residential product program and increased weatherization activity.

1.5 Discussion of Program Performance

Since 2022, Liberty has underperformed across the programs. For the current portfolio cycle, Liberty made shifts in their program design to address under performance in both the residential and C&I sectors. In the residential sector, Liberty shifted away from lighting programs for 2024 and focused the residential program on HVAC upgrades and thermostat promotion through an online marketplace. Despite program manager outreach to contractors and promotional activities for the residential programs, Liberty achieved 3.17% of the savings goals for residential products and 65.44% of the savings goal for School Based Energy Efficiency.

The Liberty C&I program continues to struggle to identify viable projects for evaluation and did not evaluate any new opportunities for C&I in 2024. As discussed in section 1.6, What’s Working and What’s Not, Liberty has a very small pool of customers in this sector. Liberty recruited a small number of C&I projects in 2023 that did not complete. The customers initially postponed these due to increases in material costs and general financial concerns. Liberty continues to reach out to customers to engage new projects.

In the past, Liberty typically addressed weatherization when contractors had excess capacity after other IOUs have met their goals, as Liberty does not have a dedicated contractor network. Liberty abandoned this process in 2024 and worked closely to find contractors capable of completing weatherization work throughout the year. This led to a small but steady stream of participation over the program year.

Liberty continued with the distribution of school kits in the fall of 2024. The Program Manager coordinated the kit content and outreach plans for teachers and school superintendents throughout Liberty’s service territory. The program now has a well-established cycle for outreach to the schools to engage them and identify accurate number of student enrollments.

1.6 What's Working and What's Not

According to the comments of the IEM, "it is unlikely that Liberty's program portfolio will ever reach its participation goals due to the challenges it faces in its service territory¹." A summary of these were filed in support of Liberty's 2013 Energy Efficiency Cost Recovery Rider re-determination filing. These barriers described below remain in place today.

Liberty serves a very small number of customers in Arkansas (about 4,300) in a predominately rural and relatively remote area with a few small towns ranging in size of roughly 100 to 3,158 residents. The Commission has recognized that due to the size and other demographics that Liberty faces a challenge unique among the public utilities subject to the required EE achievement targets. As outlined in Liberty's other energy efficiency filings, some of these hurdles include:

- *Energy efficiency overhead costs - administrative/regulatory costs must be recovered over a small customer base*
- *Size of operations - by customer count Liberty is less than one-tenth the size of the next smallest IOU in Arkansas*
- *Rural service territory - Liberty's service territory includes no urban population centers that can offer economic activity and diversity*
- *Scope of operations - by population, Liberty serves only about 3.7% of the only Arkansas County that it provides service*
- *Composition of customer base - Liberty's Arkansas service territory is comprised of about 82% residential customers*
- *Service territory demographics - based on 2010 U.S. Census Data about 42% of the citizens in Liberty's Arkansas service territory live in renter-occupied housing*
- *Industrial/Commercial customer base - nearly half of Liberty's electric sales in Arkansas come from two large commercial/industrial customers³*
- *Service territory economy - nationwide franchises and big box stores that may fill the landscape of high commerce areas are virtually nonexistent in Liberty's Arkansas service territory*
- *Service territory media - limited cost-effective media outlets for this specific rural area are available to promote Liberty's energy efficiency programs⁴*

¹ APSC Docket 07-076-TF, Doc. 192. Filed June 3, 2013.

² APSC Docket No. 07-076-TF, Doc. 169. Filed September 14, 2012.

³ Liberty's two-largest industrial customers—which comprise nearly half of its Arkansas sales—are cited above as hard-to-reach customers upon whom the portfolio's success will inevitably depend. Both customers are now exempt as Self-Direct Opt Out customers, which is still a large barrier to Liberty's energy efficiency success, but in a different way.

⁴ APSC Docket No. 13-002-U, Doc. 40. Filed May 15, 2013.

Liberty's 2017-2019 and 2020-2023 energy efficiency portfolios were configured to address these issues and 2024-2026 portfolio expanded that reach. The effort is supported by the variances granted to Liberty by Order No. 62⁵. Order No. 62 granted Liberty the following variances.

- Liberty shall set realistically achievable program plans and budget levels;
- Current mechanisms for collecting LCFC and any utility performance incentive shall remain in place, as described in Section 7 of the C&EE Rules;
- Liberty is granted the flexibility listed above from specific items in the Comprehensiveness Checklist described in Order No. 17 in Docket No. 08-144-U to streamline program offerings and best serve its customers with programs primarily aimed at cost-effectiveness;
- Pursuant to Section 4.B of the C&EE Rules and Rule 2.05 of the Commission's Rules of Practice and Procedure, the Commission finds that it is in the public interest and good cause has been shown to grant Liberty an exemption from Section 9 of the C&EE rules concerning annual reporting and it is instead required to file this information during each program design cycle, which is anticipated to be a three-year cycle;
- Liberty is required to continue to market its EE programs to the best of its ability and resources.

1.7.1 Comprehensiveness Checklist Factors

Per Order No. 62, Liberty is exempt from strict compliance with the Comprehensiveness Checklist, established by Order No. 17 in APSC Docket No. 08-144-U. In its report on 2018 EM&V, the IEM recommends, "Liberty should start tracking its progress in meeting the Commission Comprehensiveness Checklist Factors to the extent possible⁶." Liberty agrees that these recommendations are appropriate as a best practice and a benchmark, and in the following section, in compliance with the IEM's recommendation, details each item in the checklist followed by a description of Liberty's progress toward it.

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

The School-Based Energy Education program features an education curriculum designed to increase the energy awareness of middle schoolers. The goal of this program is for students to take home the awareness and enthusiasm for energy efficiency gained through their participation and share it with their families. To further encourage this, the students are equipped with direct install measures and educational materials to bring home to share what they have learned.

The Residential Products Program, which previously offered lighting measures to Liberty customers, promoted future penetration of high-efficiency lighting by offering

⁵ APSC Docket No. 07-076-TF, Doc. 267, filed May 3, 2016.

⁶ APSC Docket No. 07-076-TF, Doc. 368, filed July 5, 2019.

a “sample” of LED Lighting. The new Residential Products program is focused on HVAC measures including high efficiency equipment and thermostat rebates. This program includes direct outreach to contractors serving Liberty’s customers.

The Weatherization program in Liberty’s energy efficiency portfolio increases the overall comprehensiveness of the program, as it includes both informational items throughout the audit program, as well as a diverse mix of direct-install and home-envelope measures that address the whole home, as well as consumer behavior.

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

Due to the economies gained by leveraging implementation contractors of other Investor-Owned Utilities (“IOUs”) in Arkansas, and from using the same EM&V Consultant in ADM Associates, Liberty is able to continually offer energy efficiency programs that test as cost-effective. The cost-effectiveness of the portfolio overall improved with reintegration of the Weatherization program in 2021—as approved by Order No. 86 in APSC Docket No. 07-076-TF—should continue to improve as Liberty continues to seek expansion for the items in its direct-install kits to capture richer and deeper energy savings.

Modifications in the residential products program for 2024 included the establishment of an online option for

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

The program changes in the 2024-2026 portfolio intended to increase the diversity of end uses. Specifically, the portfolio reflected the shift away from lighting to HVAC measure in the Residential Products Program and increase focus on weatherization delivery. Liberty seeks to continually improve the diversity of its offerings by reconsidering the direct install items included in the kits provided as part of the School-Based Energy Education. The commercial program features a wide array of prescriptive measures for its customers, as well as custom rebates to address any conceivable end-use for which cost-effective energy savings can be demonstrated. For these reasons, Liberty believes it is delivering a wide array of end-uses that are achievable in the interest of its customers.

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

Liberty’s energy efficiency programs are a combination of incentives and direct measure distribution, to minimize the cash investment requirements for its economically depressed service territory. The Weatherization Program, and the School-Based Energy Education are offered completely free to participants, and feature as many direct install energy efficiency measures as can be cost-effectively delivered. The Residential Products program offers incentives to encourage higher efficiency equipment when customers are making equipment choices. They are designed to be as comprehensive as they can cost-effectively be, offering the customers the greatest value possible.

Whether such programs take advantage of opportunities to address the comprehensive needs of targeted customer sectors (for example, schools, large retail stores, agricultural users, or restaurants) or to leverage non-utility program resources (for example, state or federal tax incentives, rebate, or lending programs);

Due to the well-established challenges of its service territory, it would not be cost-effective for Liberty to offer a wide variety of programs targeted at specific economic sectors. Particularly, the size of its customer base would make segmented programs inefficient. Within its service territory, Liberty has fewer than 700 commercial customers across all sub-sectors. For example, Liberty has 3 school districts in its entire service territory. Offering a commercial program specifically designed for schools is not justified. Instead, Liberty offers one commercial rebate program designed to be as inclusive as possible, both in terms of the types of customers and the types of end uses that can be eligible.

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

Liberty believes it has complied with this item through the following actions:

- Placing emphasis on direct install measures, meaning savings begin immediately,
- Incentivizing customers to perform as many energy efficiency measures as can cost-effectively be done through its Weatherization Program and School-based Energy Education Programs,
- Incentivizing customers to change energy usage habits through its School-based Energy Education program and Weatherization Program, meaning savings are both instantaneous and long-term,
- Offering both no cost and incentive based programs to residential customers.

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

By committing to return to annual EM&V where appropriate, and by leveraging ADM Associates, which provides services to other IOUs in Arkansas, Liberty has utilized the available resources to optimize cost levels and precision in its evaluations; ensuring annual cost-effectiveness throughout its programs.

1.7 Planned changes to programs or budgets

Liberty made no modifications to the budgets as approved for 2024.

1.8 Estimation of EE Resource Potential

Liberty has not conducted an independent potential study solely for its Arkansas service territory, as less than three percent of Liberty's Central Region electric customers reside in Arkansas. Liberty took part in the Statewide Potential Study that will be used in subsequent planning cycles.

1.9 Training Achievements

Liberty did not offer any trade ally training sessions in 2023.

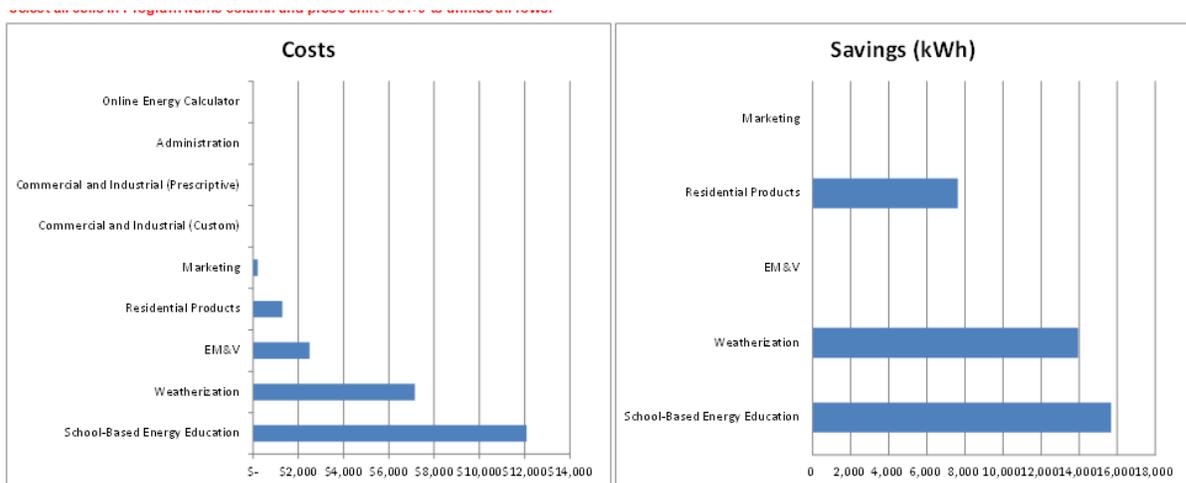
2.0 Program Portfolio

Table 2.0 outlines the spending, savings and participation for each program outlined in Sections 2.1 through 2.6.

Table 2.0

Program Name	Target Sector	Costs			Savings (kWh)			Participants			TRC Ratio
		Budget	Actual	%	Plan	Evaluated	%	Plan	Actual	%	
Residential Products	Residential	\$ 39,885	\$ 1,300	3%	79,927	7,623	10%	210	10	5%	1.54
School-Based Energy Education	Residential	\$ 16,250	\$ 12,083	74%	23,962	15,683	65%	325	334	103%	0.42
Weatherization	Residential	\$ 24,454	\$ 7,151	29%	62,390	13,957	22%	15	6	40%	0.00
Commercial and Industrial (Custom)	Commercial & Industrial	\$ 5,812	\$ -	0%	15,034	0	0%	2	0	0%	n/a
Commercial and Industrial (Prescriptive)	Commercial & Industrial	\$ 5,000	\$ -	0%	36,643	0	0%	2	0	0%	n/a
Administration	All Classes	\$ 10,000	\$ -	0%	0	0	-	0	0	-	n/a
Marketing	All Classes	\$ 1,400	\$ 209	15%	0	0	-	0	0	-	n/a
Online Energy Calculator	All Classes	\$ 4,000	\$ -	0%	0	0	-	0	0	-	n/a
EM&V	All Classes	\$ 2,500	\$ 2,500	100%	0	0	-	0	0	-	0.00
Regulatory		\$ 3,000	\$ 1,679								
TOTAL:		\$ 112,301	\$ 24,922	22%	217,956	37,263	17%	554	350	63%	0.31

Chart 2.0



2.1 Residential Products Program

2.1.1 Program Description

Customers are eligible for incentives for high efficiency HVAC equipment including thermostats.

2.1.2 Program Results

This program did not meet the expected performance for 2024.

2.1.3 Program Budget, Savings & Participants

As shown in table 2.0, the residential products program achieved 3% of both the budget and savings. There were 10 participants in the program. Of these participants, 9 received an incentive for a smart thermostat and there was 1 incentive for an HVAC system.

2.1.4 Description of Participants

Liberty defines a participant for this program as customer who receives an incentive for a qualifying measure.

2.1.5 Challenges & Opportunities

This program is a new introduction to the Arkansas service territory. Liberty has seen challenges in startup years for new program offerings and believes that participation will increase over time.

Challenges and opportunities for the program include:

- Limited amount of HVAC system replacement in the service territory each year. Liberty will work to increase outreach to contractors and may conduct a limited contractor training to try to increase awareness.
- The smart thermostat offering was limited to a single offering in 2024. In future years, there is an opportunity to increase the number of offerings made throughout the year and do so at a time when manufacturer rebates are also in place. These typically happen around Earth Day, 4th of July and Black Friday.

2.1.6 Planned or Proposed Changes to Program & Budget

Liberty made no modifications to the program's budget in 2024 and has no proposed program changes.

2.2 School-Based Energy Education

2.2.1 Program Description

Liberty provides educational kits with low-cost energy-saving items and information to middle school children ⁷.

2.2.2 Program Highlights

Liberty distributed 334 school kits in 2024 and will continue to distribute school kits in future program years.

2.2.3 Program Budget, Savings & Participants

Liberty distributed 334 school kits in 2024 exceeding the annual target for participation by 3%. The program spent 74% of the budget and achieved 66% of the savings. The participation in the program is entirely dependent on school enrollment numbers and Liberty expects this to vary each year.

2.2.4 Description of Participants

A participant in this program is defined as a sixth-grade student receiving an EnergyWise® kit.

2.2.5 Challenges & Opportunities

The number of customers reached by this program is limited by the number of school districts in Liberty's service territory. Liberty seeks to educate young customers in new ways of energy conservation.

2.2.6 Planned or Proposed Changes to Program & Budget

Liberty made no modifications to the program's budget in 2024. Liberty will revisit the savings produced by the kits and look for opportunities to increase the savings delivered by the kits to better align with targets.

⁷ APSC Docket 07-076-TF, Doc. 121. Filed September 30, 2011.

⁸ *Direct Testimony of Christina L. Baker*, APSC Docket 07-076-TF, Doc. 396. Filed July 17, 202

2.3 Weatherization Program

2.3.1 Program Description

Liberty's Weatherization Program utilizes contractors to perform energy audits and subsequently perform energy efficiency upgrades to qualifying homes.

2.3.2 Program Highlights

The program established relationships with new weatherization contractors in 2024 which was essential to steady participation throughout the year.

2.3.3 Program Budget, Savings & Participants

There were six participants in the weatherization program in 2024. The program spent 29% of the budget and achieved 22% of the savings target.

2.3.4 Description of Participants

A participant for this program is defined as a single home.

2.3.5 Challenges & Opportunities

There are inherent challenges in creating the right amount of demand for a program with small participation goals. Traditional marketing campaigns to our Arkansas customers have yielded response rates of around ten percent. Even the most conservative response rate of five percent (roughly 4,300 customers) could create unmanageable demand for the program based on its current budget.

Moreover, Liberty does not mass market this program. Participating customers come to us directly through the application on the Liberty website, through word-of-mouth, or by participation in one of Liberty's other energy efficiency programs. Due to the underperformance of this program in 2023, Liberty recruited contractors who can serve our customers in partnership with the natural gas service provider within Liberty's Service Area.

2.3.6 Planned or Proposed Changes to Program & Budget

Liberty did not make any changes to the approved budget for 2024.

2.4 Commercial and Industrial (Custom)

2.4.1 Program Description

C&I customers receive rebates for the installation or replacement of cost-effective, efficient measures not included in the C&I prescriptive program.

2.4.2 Program Highlights

- This program had no participation in 2024.
- School projects evaluated in 2023 were revisited but did not move forward due to budgetary constraints.

2.4.3 Program Budget, Savings & Participants

There was no participation, spending or saving attributable to this program in 2024.

2.4.4 Description of Participants

Liberty defines a “participant” for this program as a qualifying customer receiving a rebate. A single customer can receive a rebate for more than one measure.

2.4.5 Challenges & Opportunities

As Liberty described at length in its response to Commission Order No. 40 in APSC Docket No. 07-076-TF⁹, and briefly above in Section 1.6 - *What’s Working and What’s Not*, there are various challenges to successful implementation of energy efficiency programs in its Arkansas service territory. This concern was echoed by the IEM in her 2013 EM&V Report¹⁰.

2.4.6 Planned or Proposed Changes to Program & Budget

Liberty did not make any changes to the approved budget for 2024.

2.5 Commercial and Industrial (Prescriptive)

2.5.1 Program Description

C&I customers receive rebates for the installation, replacement, or retrofit of qualifying electric savings measures.

2.5.2 Program Highlights

This program saw no participation in 2024.

2.5.3 Program Budget, Savings & Participants

There was no participation, spending or saving attributable to this program in 2024.

2.5.4 Description of Participants

Liberty defines a “participant” for this program as a qualifying customer receiving a rebate. A single customer can receive incentives for more than one measure.

2.5.5 Challenges & Opportunities

The program counts on contractors from nearby metropolitan areas because few commercial energy efficiency vendors have offices in Liberty’s service territory. Finding vendors remains a challenge since there are few commercial customers in this area.

2.5.6 Planned or Proposed Changes to Program & Budget

Liberty did not make any changes to this program’s approved budget for the 2024 program year.

⁹ APSC Docket No. 07-076-TF, Doc. 169. Filed September 14, 2012.

¹⁰ APSC Docket 07-076-TF, Doc. 192. Filed June 3, 2013

2.6 Online Energy Calculator

2.6.1 Program Description

Liberty customers can conduct an online energy assessment, use the online energy calculator, and sign up for regular energy efficiency tips and information regarding reducing their bills through Liberty's partnership with Apogee.

2.6.2 Program Highlights

This program is informational but does not provide measurable energy savings.

2.6.3 Program Budget, Savings & Participants

There was no spend assigned to Arkansas in 2024 but the tool was available to participants. Participant is currently not tracked at the state level.

2.6.4 Description of Participants

Liberty does not measure specific participants at a level attributable to its Arkansas jurisdiction.

2.6.5 Challenges & Opportunities

While Liberty is confident in the spillover effects of this program, which would lead participants to other programs and energy efficiency upgrades, there is no way to calculate this at its current level of evaluation. Liberty is continually evaluating ways to better utilize this program.

2.6.6 Planned or Proposed Changes to Program & Budget

Liberty did not make any changes to this program's approved budget for the 2024 program year.

3.0 Supplemental Requirements

3.1 Staffing

Liberty has additional staff that support energy efficiency. This includes management, marketing, regulatory, customer service, and analysts. As of the time of this report, the energy efficiency team in the central region is currently fully staffed.

3.2 Stakeholder Activities

Liberty participates in frequent meetings of the Parties Working Collaboratively ("PWC"). This includes discussions of the TRM, Statewide Potential Studies, Weatherization Collaboratives, and other collectives. Liberty takes part via phone and/or webinars to minimize administrative and travel costs.

3.3 Information Provided to Consumers to Promote EE

Because Liberty operates within a dramatically smaller and more rural customer base than any of its peers—described at length in its response to Commission Order No. 40 in APSC Docket No. 07-076-TF¹² and other subsequent filings—customer surveys and experience identified that direct mail is a preferred method of communication with Liberty's Arkansas customers. Liberty has also had success with direct mail and the use of social media in promoting the programs. Liberty intends to increase the use of direct email and social media to promote the programs in future as these are the most cost-effective marketing methods.

¹¹ APSC Docket 07-076-TF, Doc. 121. Filed September 30, 2011.

4.0 EM&V

Pursuant to the recommendation of the IEM Liberty is conducting EM&V on an annual basis. Attached as Appendix A to this report is Liberty's 2024 EM&V Report, prepared by ADM Associates. Liberty will conduct EM&V that includes a process evaluation with the filing of its next EM&V report for the 2025 program year.

THE EMPIRE DISTRICT
ELECTRIC COMPANY
PROGRAM YEAR 2024
ENERGY EFFICIENCY
PORTFOLIO EVALUATION
EM&V REPORT

Submitted To: Empire District
Electric Company, Arkansas

Submitted On: April 30, 2025

Submitted By: ADM Associates, Inc.

ADM

ADM Associates, Inc.
3239 Ramos Circle
Sacramento, CA 95827
916.363.8383

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Terminology Reference

The following terminology was gathered from the Arkansas Technical Reference Manual V9.2 (AR TRM 9.2¹).

- *Deemed Savings* – An estimate of an energy savings or energy demand savings outcome (gross savings) for a single unit of an installed energy efficiency measure. This estimate (a) has been developed from data sources and analytical methods that are widely accepted for the measure and purpose and (b) is applicable to the situation being evaluated.
- *Ex-Ante Gross Savings* – Forecasted savings used for program and portfolio planning purposes (from the Latin for “beforehand”).² These savings are also referred to as Expected or Claimed savings.
- *Ex-Post Gross Savings* – Savings estimates reported by an evaluator after the energy impact evaluation has been completed (from the Latin for “from something done afterward”).³ These savings are sometimes also referred to as Realized or Evaluated savings.
- *Ex-Post Net Savings* – When Ex-Post Evaluation Estimated Savings are multiplied by the Net-to-Gross Ratio.
- *Free rider* – A program participant who would have implemented the program measure or practice in the absence of the program. Free riders can be total, partial, or deferred.
- *Gross Realization Rate* – The ratio of Ex-Post Gross Savings and Ex-Ante Gross Savings.
- *Participant* – A consumer who received a service offered through the subject efficiency program in a given program year.
- *Net-to-Gross (NTG)* – A factor representing net program savings divided by Ex-Post gross program savings that is applied to Ex-Post Evaluated gross program impacts, converting them into net program load impacts after adjustments for free ridership and spillover. $(1 - \text{Free ridership \%} + \text{Spillover \%})$.
- *Spillover* – Reductions in energy consumption and/or demand caused by the presence of the energy efficiency program that exceed the program-related gross savings of the participants. There can be participant and/or non-participant spillover rates depending on the rate at which participants (and non-participants) adopt energy efficiency measures or take other types of efficiency actions on their own (i.e., *without an incentive being offered*).

¹ AR TRM V9.2 can be found here: https://apps.apsc.arkansas.gov/pdf/10/10-100-R_239_4.pdf

² Definition provided in the Glossary of the AR TRM v9.2 for ‘*Ex ante* Savings Estimate’, page 100.

³ Definition provided in the Glossary of the AR TRM v9.2 for ‘*Ex post* Evaluation Estimated Savings’, page 100.

1 Summary

The following sections outline the portfolio background and programs, evaluation methods and results of the program year 2024 (PY2024) portfolio evaluation.

1.1 Introduction and Overview

In accordance with APSC Rules for Conservation and Energy Efficiency Programs (CE&E Rules), Empire engaged ADM Associates, Inc., (ADM) to conduct an evaluation, measurement, and verification (EM&V) of its portfolio. The ADM staff, collectively referred to as “the Evaluators” or “ADM”, evaluated the Liberty-Empire portfolio. Liberty-Empire offered a portfolio of energy efficiency programs, which provided a comprehensive range of customer options focused on energy efficiency and educational options. During PY2024, four programs were offered:

TABLE 1-1 PY2024 EMPIRE ENERGY EFFICIENCY PROGRAM SUMMARY

Program	Description
Residential Products Program	The Residential Products was restructured to offer two different channels under the program. The program gives customers an opportunity to receive rebates for energy efficient products through an online marketplace and/or efficient HVAC equipment. Liberty-Empire implements this program.
School Based Energy Education Program	Educational materials and energy efficiency kits are distributed to students within the service territory. The kit includes LED lamps, a toilet leak repair kit and a kitchen aerator. AM Conservation Group implements this program.
Residential Weatherization Program	This program offers single family customers within Empire-Liberty’s service territory an opportunity to receive an energy audit and home weatherization improvements such as air infiltration reduction, ceiling insulation, and duct sealing. Empire implements this program.
Commercial and Industrial Rebate Program	The Commercial and Industrial Rebate (C&I) Program is designed to encourage the installation of energy efficient equipment by providing incentives to lower the cost of energy efficient equipment for commercial and industrial facilities

During PY2024, there was no participation in the Commercial and Industrial Rebate Program, thus no applicable ex-ante/post savings. For this reason, an evaluation of this program was not completed and this report only includes results for the three residential programs.

1.2 Evaluation Objectives and Methodology

Due to Liberty-Empire’s small service area and associated small program budgets, the program evaluation takes an abbreviated approach compared to what is executed for other electric utilities in Arkansas. The general approach to validation of savings for Liberty-Empire includes the following steps:

- (1) Validate use of appropriate deemed savings estimates by measure and by program;
- (2) Cite applicable in-service rates (ISRs) as-developed for other utilities in Arkansas (SWEPCO, OG&E, EAI), producing ex-post gross kWh savings and kW reductions; and
- (3) Cite applicable net-to-gross ratios (NTGs) as-developed for other utilities in Arkansas (SWEPCO, OG&E, EAI), producing ex-post net kWh and kW reductions.

To accomplish the evaluation objectives, the Evaluators used the following approaches:

- **Review program tracking data / project documentation.** For the three programs, project data from the implementers was reviewed to ensure that tracking systems are consistent with AR TRM 9.2 Volume 1, Protocol A;
- **Validate ex-post gross kWh savings and kW reductions.** The Evaluators referenced the AR TRM 9.2 to determine savings with deemed savings values and applied applicable in-service rates (ISRs). This is consistent with the AR TRM 9.2 Volume 1, Protocol B2 and B3; and
- **Estimate Net-to-Gross (NTG) ratios and ex-post net savings.** NTG ratios used in this evaluation were sourced from similar evaluations of other Arkansas programs. This method is consistent with Protocol A of the AR TRM 9.2 Volume 1, Protocol B3.

The Evaluators note that even this abbreviated evaluation constitutes an outsized percent of expenditure for Liberty-Empire, in comparison to both Arkansas and national norms. The Evaluators recommend that Liberty-Empire be required to submit an evaluation no more than once per triennial planning cycle, provided that Liberty-Empire uses the last known evaluation results for their programs in their savings filings.

1.3 Savings Results Summary

The following tables summarize the results of the gross and net impact evaluations, respectively.

TABLE 1-2 PY2024 PORTFOLIO EVALUATION GROSS SAVINGS RESULTS

Program	Ex-Ante kWh	Ex-Post Gross kWh	kWh Realization Rate	Ex-Ante kW	Ex-Post Gross kW	kW Realization Rate
Residential Products	9,931	9,931	100.0%	0.66	0.66	100.0%
School Based Energy Education	15,683	15,683	100.0%	2.51	2.51	100.0%
Residential Weatherization	14,093	14,093	100.0%	9.53	9.53	100.0%
C&I Rebate	0	0	N/A	0.00	0.00	N/A
Total	39,707	39,707	100.0%	12.70	12.70	100.0%
Sums may differ due to rounding.						

TABLE 1-3 PY2024 PORTFOLIO EVALUATION NET SAVINGS RESULTS

Program	Ex-Post Gross kWh	kWh NTG	Ex-Post Net kWh	Ex-Post Gross kW	kW NTG	Ex-Post Net kW
Residential Products	9,931	76.8%	7,623	0.66	76.8%	0.47
School Based Energy Education	15,683	100.0%	15,683	2.51	100.0%	2.51
Residential Weatherization	14,093	99.0%	13,957	9.53	99.0%	9.44
C&I Rebate	0	N/A	0.00%	0.00	N/A	0.00
Totals	39,707	93.8%	37,263	12.70	93.8%	12.42
Sums may differ due to rounding.						

The NTG ratios were assigned at the measure-level, with program-level NTG ratios reflecting the aggregate impact of measure-level values.

2 Residential Products Program

The Residential Products Program was restructured for the PY2024 – PY2026 triennial cycle to offer energy efficient products through an online marketplace and/or rebates for installing high efficiency HVAC equipment.

Through the Marketplace channel, eligible customers may purchase ENERGY STAR® products such as air purifiers, dehumidifiers, freezers, and refrigerators and receive a rebate for the products. Additionally, customers may also purchase advanced power strips, faucet aerators, low-flow showerheads, and smart thermostats.

Through the HVAC channel, eligible customers may receive rebates after purchasing and installing qualifying energy efficient HVAC equipment. The HVAC equipment offerings include the following:

- Central AC units rated at SEER ≥ 16, EER ≥ 13.0;
- Central HP units rated at SEER ≥ 16, EER ≥ 13.0, HSPF ≥ 9.0;
- Heat Pump Mini-Split units rated at SEER ≥ 16, EER ≥ 13.0, HSPF ≥ 9.0; and
- Geothermal Heat Pump units rated at EER ≥ 17.1.

2.1 Gross Impact Evaluation

In PY2024, one participant received a rebate to replace their inefficient heat pump with an energy efficient heat pump through the HVAC channel. The Evaluators reviewed the project documentation that was provided to determine the appropriate savings methodology. Information such as replacement scenario, existing unit age, and efficient unit ratings were gathered from project documentation.

Ex-post savings were sourced from the AR TRM 9.2, 2.1.8 Heat Pump Replacement. The Evaluators had to adjust the efficient SEER values by converting the SEER values to SEER2 values. The following assumptions were made for the singular project:

- Replacement Scenario: Early Retirement;
- Approximate Age of Existing Unit: 15 years;
- Remaining Useful Life (RUL): 7.1;
- Weather Zone: 9;
- EFLHc, EFLHh: 1305, 1868 (respectively);
- Baseline SEER2, EER2, HSPF2: 12.4, 9.8, 6.5 (respectively); and
- Efficient SEER2, EER2, HSPF2: 19.5, 12.4, 8.5 (respectively).

Additionally, in PY2024, nine participants received a rebate to replace their inefficient thermostat with an energy efficient smart thermostat through the Marketplace channel. The Evaluators reviewed the project documentation that was provided to determine the appropriate savings methodology.

Information such as home heating type and addresses were utilized to calculate appropriate savings.

Ex-post savings were sourced from the AR TRM 9.2, 2.1.12 Smart Thermostat. The Evaluators performed online research to gather home square footages and assumed a “Default” replacement scenario since the documentation did not provide baseline information. In cases where heating type was not specified

for electric fuel type, the Evaluators sourced the electric heating percentages from SWEPCO AR’s Efficient Products Pathway smart thermostat participation in PY2024.

Below, Table 2-1 presents a summary of ex-ante and ex-post savings for this program.

TABLE 2-1 PY2024 RESIDENTIAL PRODUCTS PROGRAM GROSS SAVINGS

Measure	Ex-Ante Energy Savings (kWh)	Ex-Post Energy Savings (kWh)	Realization Rate (kWh)	Ex-Ante Demand Reductions (kW)	Ex-Post Demand Reductions (kW)	Realization Rate (kW)
Central HP Replacement	3,579	3,579	100.0%	0.66	0.66	100.0%
Smart Thermostat	6,352	6,352	100.0%	0.00	0.00	N/A
Total	9,931	9,931	100.0%	0.66	0.66	100.0%

2.2 Net Impact Evaluation

The Evaluators cited the Southwestern Electric Power Company, Arkansas (SWEPCO AR) Residential Energy Improvement Pathway (REIP) single family component to source the applicable NTG ratio to apply to the ex-post gross savings calculated for the Heat Pump Replacement project.

Additionally, the Evaluators cited the SWEPCO AR Efficient Products Pathway (EPP) to source the applicable NTG ratio to apply to the ex-post savings calculated for the Smart Thermostats rebated through the Marketplace channel.

The overall SWEPCO AR NTG ratios were developed from participant surveys that were administered in PY2023 and included a mix of HVAC equipment that were rebated. These results were applied to the PY2024 SWEPCO AR REIP and EPP measures and thus was applied to the Residential Products measures. Table 2-2 summarizes results from the PY2023 SWEPCO AR REIP participant surveys.

TABLE 2-2 LITERATURE REVIEW RESULTS FOR RESIDENTIAL HVAC

Reference Number	FR	SP	NTG	PY	State
1	29.2%	0.0%	70.8%	2023	AR
2	19.9%	0.0%	80.1%	2023	AR
1. PY2023 SWEPCO AR EM&V Report (REIP-SF NTG) – HVAC replacements					
2. PY2023 SWEPCO AR EM&V Report (EPP) – Smart Thermostats					

The resulting net savings are presented below in Table 2-3.

TABLE 2-3 PY2024 RESIDENTIAL PRODUCTS PROGRAM NET SAVINGS SUMMARY

Measure	Ex-Post Gross Energy Savings (kWh)	Ex-Post Net Energy Savings (kWh)	Net-to-Gross (%)	Ex-Post Gross Demand Reductions (kW)	Ex-Post Net Demand Reductions (kW)
Central HP Replacement	3,579	2,535	70.8%	0.66	0.47
Smart Thermostat	6,352	5,088	80.1%	0.00	0.00
Total	9,931	7,623	76.8%	0.66	0.47

3 Residential Weatherization Program

Residential customers residing in individually-metered single-family households are eligible to receive an energy assessment/audit to determine which weatherization improvements would benefit the homeowners. Customers may receive incentives to complete air infiltration reduction, ceiling insulation, and/or duct sealing improvement projects, at no cost to the participant.

Additionally, customers may be eligible to receive free or significantly discounted advanced power strips, faucet aerators, low-flow showerheads, smart thermostats, and/or water heater jackets.

3.1 Gross Impact Evaluation

In PY2024, there were six distinct participants who received a mix of weatherization measures, accounting for a total of 23 measures, including a home assessment for each participant. In total, there were:

- 2 Advanced Power Strips;
- 6 Air Infiltration measures;
- 6 Assessments;
- 3 Ceiling / Attic Insulation measures; and
- 6 Duct Sealing measures.

The Evaluators reviewed project documentation and invoices for each participant. The Evaluators noted that the six participants also participated in Black Hill Energy’s Home Energy Savings (HES) Pathway and utilized the HES tracking data to gather additional home characteristic information to properly calculate ex-post energy savings.

Ex-post energy savings were sourced from the following AR TRM 9.2 sections:

- 2.6.1 Advanced Power Strip;
- 2.2.9 Air Infiltration;
- 2.2.2 Ceiling Insulation; and
- 2.1.11 Duct Sealing.

Additionally, the Evaluators also applied the same in-service rates (ISRs) that were applied to the PY2024 Southwestern Electric Power Company, Arkansas (SWEPCO AR) Home Weatherization Pathway (HWP). The ISRs were derived from residential site visits and literature reviews performed in PY2024. Table 3-1 below summarizes the ISRs that were applied to the Residential Weatherization Program in PY2024.

TABLE 3-1 PY2024 ISRS FOR RESIDENTIAL WEATHERIZATION MEASURES

Measure	ISR	Source
Advanced Power Strip	90.3%	PY2024 SWEPCO AR site visits; literature review results
Air Infiltration	101.9%	PY2024 SWEPCO AR site visits; literature review results
Ceiling Insulation	100.0%	PY2024 SWEPCO AR site visits; literature review results
Duct Sealing	101.7%	PY2024 SWEPCO AR site visits; literature review results

Table 3-2 below summarizes the ex-post gross savings for the Residential Weatherization Program.

TABLE 3-2 PY2024 RESIDENTIAL WEATHERIZATION PROGRAM GROSS SAVINGS

Measure	Ex-Ante Energy Savings (kWh)	Ex-Post Energy Savings (kWh)	Realization Rate (kWh)	Ex-Ante Demand Reductions (kW)	Ex-Post Demand Reductions (kW)	Realization Rate (kW)
Advanced Power Strip	455	455	100.0%	0.05	0.05	100.0%
Air Infiltration	1,826	1,826	100.0%	1.08	1.08	100.0%
Ceiling Insulation	3,971	3,971	100.0%	3.26	3.26	100.0%
Duct Sealing	7,841	7,841	100.0%	5.14	5.14	100.0%
Total	14,093	14,093	100.0%	9.53	9.53	100.0%
Sums may differ due to rounding.						

3.2 Net Impact Evaluation

The Evaluators cited SWEPCO AR’s Home Weatherization Pathway within the Home Solutions Program (HSP) to source an applicable NTG ratio to apply to the Residential Weatherization Program. A NTG ratio of 99.0% was applied to the ex-post gross savings and reductions.

The SWEPCO AR HWP NTG ratio was developed from participant surveys that were administered in PY2023 and included a mix of weatherization projects that were completed. These results were applied to the PY2024 SWEPCO AR REIP measures and thus was applied to the Residential Weatherization measures. Table 3-3 below summarizes results from the PY2023 SWEPCO AR HWP (formerly HPwES) participant surveys.

TABLE 3-3 LITERATURE REVIEW RESULTS FOR RESIDENTIAL WEATHERIZATION

Reference Number	FR	SP	NTG	PY	State
1	1.3%	0.4%	99.0%	2023	AR
Average	1.3%	0.4%	99.0%		
1. PY2023 SWEPCO AR EM&V Report (HPwES NTG)					

The resulting net savings are summarized in Table 3-4 below.

TABLE 3-4 PY2024 RESIDENTIAL WEATHERIZATION PROGRAM NET SAVINGS

Measure	Ex-Post Gross Energy Savings (kWh)	Ex-Post Net Energy Savings (kWh)	Net-to-Gross (%)	Ex-Post Gross Demand Reductions (kW)	Ex-Post Net Demand Reductions (kW)
Advanced Power Strip	455	451	99.0%	0.05	0.05
Air Infiltration	1,826	1,808	99.0%	1.08	1.07
Ceiling Insulation	3,971	3,933	99.0%	3.26	3.23
Duct Sealing	7,841	7,765	99.0%	5.14	5.09
Total	14,093	13,957	99.0%	9.53	9.44
Sums may differ due to rounding.					

4 School Based Energy Efficiency Program

Through the School Based Energy Efficiency Program, Liberty-Empire provides energy efficiency kits containing low-cost measures to sixth grade students in its service territory for installation in their homes. These kits include the following:

- (1) 1.5 GPM Faucet Aerator;
- (2) 9W A19 Omni-Directional LEDs; and
- (1) Toilet Leak Repair.

In addition to the kit, students receive unlimited access to an interactive program website and a toll-free help line, where they can ask questions. Liberty-Empire also provides teachers with teaching aids and supplemental materials, such as a teacher book, a step-by-step program checklist, lesson plans, program videos, program evaluation forms, an Arkansas State Education Standards Correlation Chart, a pre-test and post-test answer key, and electricity, water, and natural gas posters that can be used to increase student awareness of and appreciation for energy efficiency.

4.1 Gross Impact Evaluation

In PY2024, a total of 334 school kits were delivered through the program. Ex-post savings were sourced from the AR TRM 9.2, 2.5.2 Omni-Directional LEDs and 2.3.4 Faucet Aerators.

Additionally, the Evaluators sourced applicable ISRs from Oklahoma Gas and Electric’s (OG&E) PY2024 LivingWise® channel within their Home Energy Efficiency Program (HEEP). The Evaluators reviewed PY2024 OG&E LivingWise student survey results and developed applicable ISRs for each of the measures included in the kits. Furthermore, the Evaluators performed a literature review to supplement the ISRs from the student surveys. Table 4-1 shows the results from a literature review for school kits.

TABLE 4-1 SCHOOL KITS – MIXED MEASURES LITERATURE REVIEW RESULTS

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

Below, Table 4-2 summarizes the ISRs that were applied to the LED lamps and the faucet aerators.

TABLE 4-2 PY2024 ISRs FOR SCHOOL KIT MEASURES

Measure	ISR	Source
9W LED Lamp	74.5%	PY2020 OG&E LivingWise student survey results (for LEDs)
1.5 GPM Faucet Aerator	42.4%	PY2024 OG&E LivingWise student survey (22.2%); literature review (73.0%)

Table 4-3 summarizes the overall PY2024 gross savings for the School Based Energy Efficiency Program.

TABLE 4-3 PY2024 SCHOOL BASED ENERGY EFFICIENCY PROGRAM GROSS SAVINGS

Measure	Ex-Ante Energy Savings (kWh)	Ex-Post Energy Savings (kWh)	Realization Rate (kWh)	Ex-Ante Demand Reductions (kW)	Ex-Post Demand Reductions (kW)	Realization Rate (kW)
9W A19 LED Lamp	12,551	12,551	100.0%	2.18	2.18	100.0%
1.5 GPM Aerator	3,132	3,132	100.0%	0.33	0.33	100.0%
Toilet Leak Repair	0	0	N/A	0.00	0.00	N/A
Total	15,683	15,683	100.0%	2.51	2.51	100.0%

Sums may differ due to rounding.

4.2 Net Impact Evaluation

The Evaluators cited OG&E’s PY2024 LivingWise channel within their Home Energy Efficiency Program (HEEP) for the applicable NTG to apply. The Evaluators also referenced the Independent Evaluation Monitor’s (IEM) memorandum addressing lighting distributed within income-qualified areas in Arkansas.

The IEM memo addressing free-ridership and baseline for LEDs in income-qualified areas concluded that school kit distributions warrant a 100% NTG. Although the LivingWise Schools Outreach kits did not include LEDs in PY2024, the Evaluators determined that the same 100% NTG should apply to the non-lighting measures included in the kits, as the NTG rationale is based on the delivery channel—namely, the free distribution of equipment to income-qualified customers—rather than on the specific measures provided.

TABLE 4-4 LITERATURE REVIEW RESULTS FOR SCHOOL KITS

Reference Number	FR	SP	NTG	PY	State
1	0.0%	0.0%	100.0%	2023	AR
Average	0.0%	0.0%	100.0%		

1. IEM Memo addressing ‘low income areas’

The Evaluators concluded that the NTG of 100.0% based on the IEM memo regarding ‘low income areas’ in which typical lighting kits were distributed in other residential programs within Arkansas. The NTG of 100% was applied to OG&E’s LivingWise channel in PY2024 and thus was also applied to the School Based Energy Efficiency Program. The resulting net savings are presented below in Table 4-5.

TABLE 4-5 PY2024 SCHOOL BASED ENERGY EFFICIENCY PROGRAM NET SAVINGS SUMMARY

Measure	Ex-Post Gross Energy Savings (kWh)	Ex-Post Net Energy Savings (kWh)	Net-to-Gross (%)	Ex-Post Gross Demand Reductions (kW)	Ex-Post Net Demand Reductions (kW)
9W A19 LED	12,551	12,551	100.0%	2.18	2.18
1.5 GPM Aerator	3,132	3,132	100.0%	0.33	0.33
Toilet Leak Repair	0	0	100.0%	0.00	0.00
Total	15,683	15,683	100.0%	2.51	2.51

Sums may differ due to rounding.

CERTIFICATE OF SERVICE

This is to certify that the undersigned has served a copy of the foregoing instrument via email, to all parties of record on this 1st day of May, 2025.

/s/ Angela Cloven

Angela Cloven