

**BEFORE THE
ARKANSAS PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF THE APPLICATION)
OF ARKANSAS OKLAHOMA GAS)
CORPORATION FOR APPROVAL OF)
QUICK START ENERGY EFFICIENCY)
PROGRAMS)**

DOCKET NO. 07-077-TF

**COMPREHENSIVE ENERGY EFFICIENCY PLAN
PROGRAM YEAR 2022
ANNUAL REPORT**

May 1, 2023

Table of Contents

1.0 Executive Summary	3
Historical Background	3
Major Accomplishments and Milestones	3
Goals and Objectives for the EE Portfolio	4
Progress Achieved Versus Goals and Objectives	4
Portfolio Savings, Participation Levels, and Prior Year Comparison	4
EE Portfolio Summary	5
EE Portfolio Summary by Program	5
EE Portfolio Summary by Cost Type	6
Company Statistics	7
2.0 Portfolio Programs	7
2.1 AOG Weatherization Program	7
2.1.1 Program Description	7
2.1.2 Program Highlights	7
2.1.3 Program Budget, Savings, and Participants	8
2.1.4 Description of Participants	9
2.1.5 Challenges and Opportunities	9
2.2 Commercial/Industrial Solutions Program	9
2.2.1 Program Description	9
2.2.2 Program Highlights	9
2.2.3 Program Budget, Savings, and Participants	10
2.2.4 Description of Participants	10
2.2.5 Challenges and Opportunities	10
2.2.6 Planned or Proposed Changes to Program and Budget	10
2.3 Equipment Rebate Program	11
2.3.1 Program Description	11
2.3.2 Program Highlights	11
2.3.3 Program Budget, Savings, and Participants	12
2.3.4 Description of Participants	12

2.3.5 Challenges and Opportunities.....	12
2.3.6 Planned or Proposed Changes to Program and Budget.....	12
2.4 Energy Efficiency Arkansas.....	13
2.4.1 Program Description	13
2.4.2 Program Highlights.....	13
2.4.3 Program Budget, Savings, and Participants	13
2.4.4 Description of Participants.....	13
2.4.5 Challenges and Opportunities.....	13
2.4.6 Planned or Proposed Changes to Program and Budget.....	13
2.5 Low-Income Pilot Program.....	14
2.5.1 Program Description	14
2.5.2 Program Highlights.....	14
2.5.3 Program Budget, Savings, and Participants	14
2.5.4 Description of Participants.....	15
2.5.5 Challenges and Opportunities.....	15
2.5.6 Planned or Proposed Changes to Program and Budget.....	15
3.0 Supplemental Requirements	16
3.1 Staffing	16
3.2 Stakeholder Activities	16
Internal Training.....	16
External Training	17
3.3 Information Provided to Consumers to Promote EE	17
4.0 Appendix A: Carbon Calculator Scenarios.....	18
5.0 Appendix B: EM&V Contractor Reports.....	19

1.0 Executive Summary

This document is provided to the Arkansas Public Service Commission (“Commission”) as the annual review of Arkansas Oklahoma Gas Corporation’s (“AOG” or “Company”) Comprehensive Energy Efficiency Plan (“CEE Plan” or “Plan”) for the 2022 Program Year (“Program Year”), pursuant to Order No. 18 in Docket No. 06-004-R.

Historical Background

In the *Application of Arkansas Oklahoma Gas Corporation for Approval of its 2020-2022 Energy Efficiency Program Plans and Budgets* filed on March 15, 2019 in Docket No. 07-077-TF, AOG proposed the continuation of the following four programs previously approved by the Commission:

1. AOG Weatherization Program (“AOGWP”);
2. Commercial/Industrial Solutions (“CIS”) Program;
3. Equipment Rebate Program (“ERP”); and
4. Energy Efficiency Arkansas (“EEA”).

AOG also proposed the establishment of a fifth program within the Plan:

5. Low-Income Pilot Program (“LIPP”).

This CEE Plan was designed to achieve an annual energy savings target of 0.50% of 2018 retail sales in program years 2020 - 2022, per Order No. 43 in Docket No. 13-002-U. The Plan was deemed comprehensive, pursuant to Order No. 17 in Docket No. 08-144-U and approved by the Commission on June 17, 2019 in Order No. 88 in Docket No. 07-077-TF.

To maximize both consistency and efficiency in program plan design and implementation, AOG continued a longstanding collaboration with Oklahoma Gas and Electric Company (“OG&E”), Summit Utilities Arkansas (formerly CenterPoint Energy Arkansas), and Black Hills Energy Arkansas, Inc. to plan, implement, and analyze many of the programs in AOG’s 2020 - 2022 CEE Plan. As a small company, this collaboration expanded the options available to AOG and decreased administrative costs. This saved AOG ratepayers money while offering a diverse, comprehensive portfolio of EE programs. AOG would also like to recognize the achievements of the active participants of the Parties Working Collaboratively (“PWC”). This collaborative effort has been of benefit to AOG in complying with the regulatory requirements of EE programs.

Major Accomplishments and Milestones

The 2022 Program Year represents AOG’s best efforts to develop and implement a portfolio of comprehensive energy efficiency programs designed to meet or exceed the Commission’s energy savings goals in Arkansas. AOG is proud to report that the 2022 Program Year results exceeded the energy savings target set by the Commission. Overall, AOG captured 143% of its Commission-ordered net energy savings target while expending 68% of the 2022 CEE Plan budget. Additionally, AOG’s portfolio of programs achieved a Total Resource Cost (TRC) ratio of 2.10. AOG’s historical portfolio TRC ratios are as follows:

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1.60	1.72	2.67	2.24	2.67	1.98	1.77	2.07	1.50	2.00

Goals and Objectives for the EE Portfolio

As presented in the CEE Plan, AOG had the following objectives for its portfolio of EE programs in 2022:

1. Reduce end-use natural gas consumption in a cost-effective manner to save money for consumers and conserve nonrenewable resources;
2. Protect the environment by encouraging installation of efficiency measures that help reduce carbon dioxide emissions and air pollutants;
3. Increase residential and commercial customer awareness of available energy efficiency opportunities by encouraging equipment upgrades and behavioral changes;
4. Generate greater customer awareness of the energy efficiency programs available through AOG to support their energy efficiency objectives;
5. Identify cost-effective natural gas saving measures for program participants;
6. Improve relationships with customers, trade allies, and stakeholders by providing value-added energy efficiency services, training and education, hardware, verification and support;
7. Support a more robust local and statewide economy by utilizing local labor and helping Arkansas residents reduce their monthly energy expenses.

In AOG's CEE Plan, energy savings goals were set for each program. These goals were developed to ensure that the successful implementation of each individual program would result in the total portfolio of AOG programs meeting the Commission ordered savings target. AOG's Commission ordered net energy savings target for 2022 was 343,268 therms.

Progress Achieved Versus Goals and Objectives

AOG captured net annual energy savings of 491,429 therms during the 2022 Program Year. This represents 143% of the net energy savings that AOG was tasked with obtaining by order of the Commission. In addition to exceeding the Commission's energy savings target, AOG's CEE Plan was successful in increasing energy efficiency awareness in all markets and developing positive relationships with customers, trade allies, and stakeholders.

Portfolio Savings, Participation Levels, and Prior Year Comparison

AOG's historical net energy savings (therms) has been impressive:

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
378,230	559,136	591,591	535,479	534,421	536,202	500,829	492,071	459,387	458,151

Customer participation is critical to the success of AOG's EE programs. Participation levels were consistent with the net energy savings performance of each individual program in AOG's 2022 EE portfolio.

EE Portfolio Summary

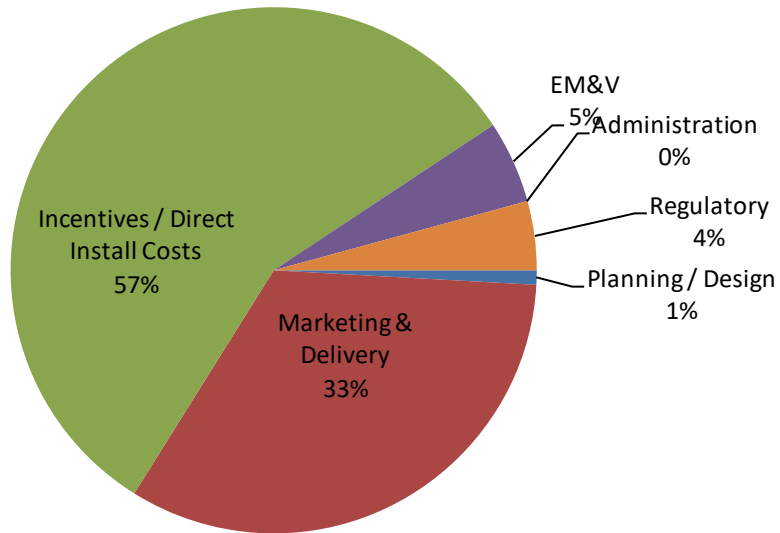
2022 Portfolio Summary										
Net Energy Savings		Costs			Cost-Effectiveness			Goal Achievement		
Demand Thems	Energy Thems	Actual Expenditures	LCFC	Performance Incentives	TRC Net Benefits (NPV)	TRC Ratio	PAC Ratio	Commission Established Target % of Baseline	Actual Savings Achieved % of Baseline	% of Target Achieved (%)
n/a	491,429	\$ 1,962,490	\$ 1,270,970	\$ 232,092	\$ 2,681,899	2.10	2.05	0.50%	0.72%	143%

EE Portfolio Summary by Program

EE Portfolio Expenditures by Program					
Program Name	Target Sector	Program Type	2022		% of Budget
			Budget (\$)	Actual (\$)	
AOG Weatherization	Residential	Whole Home	1,781,277	1,047,088	59%
Low Income Pilot Program	Residential	Whole Home	86,957	86,957	100%
Equipment Rebate	Res/Small Business	Prescriptive/Standard Offer	478,809	302,694	63%
Commercial/Industrial	Small Business/C&I	Other	446,885	427,527	96%
EEA	All Classes	Behavior/Education	14,929	14,929	100%
Regulatory	-	-	92,288	83,295	90%
		Total	2,901,145	1,962,490	68%

EE Portfolio Summary by Cost Type

EE Portfolio Expenditure Summary by Cost Type				
Cost Type	2022 Total Expenditures			
	% of Total	Budget (\$)	Actual (\$)	% of Total
Planning / Design	2%	56,469	17,275	1%
Marketing & Delivery	17%	502,702	647,804	33%
Incentives / Direct Install Costs	72%	2,075,026	1,114,759	57%
EM&V	5%	157,141	99,357	5%
Administration	1%	17,519	-	0%
Regulatory	3%	92,288	83,295	4%
	100%	2,901,145	1,962,490	100%



Company Statistics

Company Statistics										
Program Year	Revenue and Expenditures					Energy				
	Total Revenue (a) (\$000's)	Budget		Actual		Total Annual Energy Sales (d) (Therms)	Plan		Evaluated	
		Portfolio Budget (b) (\$000's)	% of Revenue (%=b/a)	Portfolio Spending (c) (\$000's)	% of Revenue (%=c/a)		Net Annual Savings (e) (Therms)	% of Energy Sales (%=e/d)	Net Annual Savings (f) (Therms)	% of Energy Sales (%=f/d)
2018	\$ 45,924	\$ 2,603	5.7%	\$ 2,588	5.6%	77,576,730	444,944	0.57%	500,829	0.65%
2019	\$ 46,245	\$ 2,681	5.8%	\$ 2,332	5.0%	75,814,290	444,944	0.59%	492,071	0.65%
2020	\$ 43,990	\$ 2,805	6.4%	\$ 2,404	5.5%	70,319,580	454,245	0.65%	459,387	0.65%
2021	\$ 47,089	\$ 2,834	6.0%	\$ 1,627	3.5%	73,302,890	457,858	0.62%	458,151	0.63%
2022	\$ 61,124	\$ 2,901	4.7%	\$ 1,962	3.2%	78,030,660	461,620	0.59%	491,429	0.63%

2.0 Portfolio Programs

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

2.1 AOG Weatherization Program

2.1.1 Program Description

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

2.1.2 Program Highlights

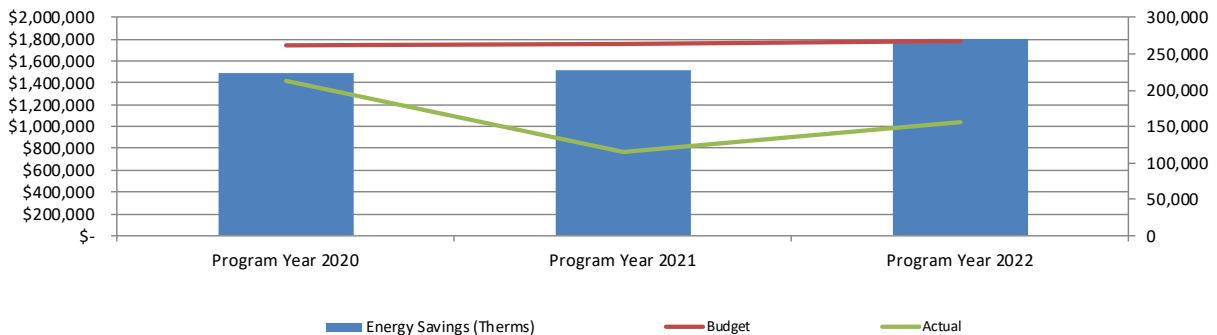
- This program began on July 1, 2011 and has continued through the 2022 Program Year.
- The program has grown to become the cornerstone of the residential portion of AOG’s CEE Plan.
- On December 9, 2014 in Order No. 22 in Docket No. 13-002-U, the Commission approved the *Recommended Weatherization Approach to Provide Consistent Weatherization Programs across*

All Utilities in Arkansas. This Core Program was modeled after the thriving AOG/OG&E Weatherization Program.

- The program was implemented by CLEAResult, a contractor for other utilities adhering to the state’s Consistent Weatherization Approach (CWA) including Black Hills Energy, SWEPCO, OG&E, and Summit Utilities Arkansas. Utilizing CLEAResult provided additional benefits to AOG customers including cost sharing with an additional overlapping electric utility and significantly increased quality assurance inspections of weatherized homes by BPI-certified personnel. AOG also benefited by engaging CLEAResult’s network of trade allies, experienced across multiple weatherization programs in Arkansas. Trade allies within this network are well-versed in building performance science and receive rigorous training adhering to best practices according to Factor 1 as designated by the Commission. Through the efforts of these highly skilled contractors, AOG was able to continue enhancing program performance, capturing 404 therm savings per project compared to 330 in 2021
- AOGWP is very successful. In 2022, the program weatherized 746 homes and captured net energy savings of 270,805 therms.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 3.25.
- The program is remarkably popular and requires a minimal marketing budget.
- AOG receives a considerable amount of solicited and unsolicited positive feedback from participants of this program.

2.1.3 Program Budget, Savings, and Participants

AOG Weatherization												
Program	Expenditures			Energy Savings (Therms)			Demand Savings (Therms)			Participants		
	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2020	\$ 1,741,200	\$ 1,416,748	81%	216,543	223,009	103%	n/a	n/a	-	857	838	98%
Program Year 2021	\$ 1,754,746	\$ 770,478	44%	216,543	227,257	105%	n/a	n/a	-	857	705	82%
Program Year 2022	\$ 1,781,277	\$ 1,047,088	59%	216,543	270,805	125%	n/a	n/a	-	857	746	87%



2.1.4 Description of Participants

Participants of the AOGWP include homeowners or leaseholders of a single-family home, duplex, or manufactured home constructed prior to 2012 or have monthly usage (as shown on the bill) of five cents per square foot or higher. The eligible dwelling must have been occupied for the previous 12 months and not received identical weatherization measures through a utility weatherization program in the past five years.

2.1.5 Challenges and Opportunities

Per ADM's recommendations, AOG will examine the unexpended funding allocated to the AOGWP. This development is not unexpected by program staff as the migration from per-measure payments to per-term payments created a more efficient system for program incentive expenses. As the program model changed mid-cycle (Jan. 2021), the planned budget is based on expenses at the time of planning (Mar. 2019). AOG plans use the upcoming CEE Plan for 2024 – 2026 to reallocate these funds more efficiently.

2.2 Commercial/Industrial Solutions Program

2.2.1 Program Description

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

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

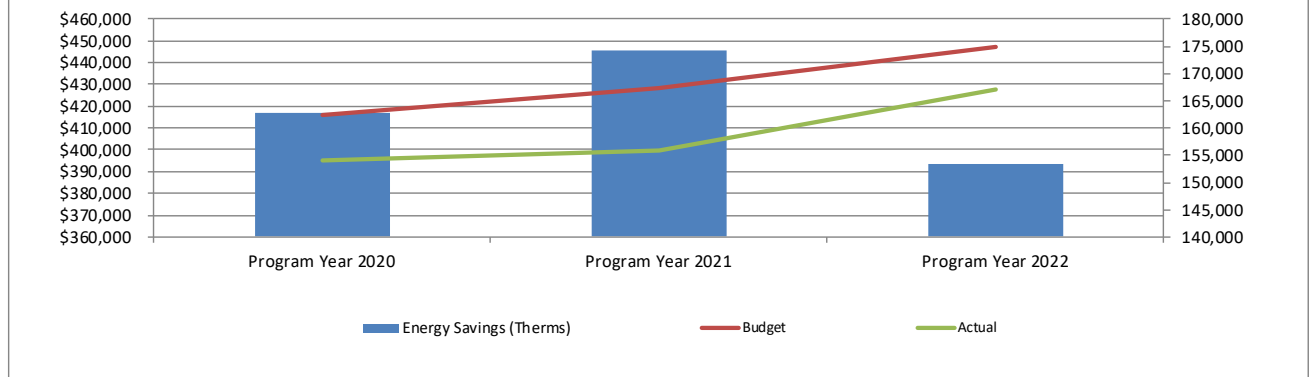
2.2.2 Program Highlights

- This program began on July 1, 2011 and has continued through the 2022 Program Year.
- The program targets AOG's larger customers, ensuring comprehensiveness of the CEE Plan.
- The program is managed by AOG and is implemented by CLEARResult.
- The program captured net energy savings of 153,348 therms in 2022.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 1.38.

- Custom project Estimated Useful Life has increased to 14.80, compared to 7.53 in 2020 and 13.26 in 2021.
- Satisfaction with the program operation is very high. The program builds goodwill with both trade allies and customers.

2.2.3 Program Budget, Savings, and Participants

Commercial/Industrial												
Program	Expenditures			Energy Savings (Therms)			Demand Savings (Therms)			Participants		
	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2020	\$ 415,881	\$ 395,147	95%	161,132	162,821	101%	n/a	n/a	-	1,484	1,741	117%
Program Year 2021	\$ 428,492	\$ 399,356	93%	160,923	174,241	108%	n/a	n/a	-	1,424	1,001	70%
Program Year 2022	\$ 446,885	\$ 427,527	96%	160,908	153,348	95%	n/a	n/a	-	1,276	1,012	79%



2.2.4 Description of Participants

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

2.2.5 Challenges and Opportunities

Per ADM’s recommendations, AOG will continue to explore opportunities to expand upon the success in building optimization projects through further coordination with OG&E. AOG will also work with CLEAResult to examine refinements to incremental costs.

2.2.6 Planned or Proposed Changes to Program and Budget

AOG has no planned changes to its programs or budgets at this time.

2.3 Equipment Rebate Program

2.3.1 Program Description

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

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

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

Equipment	Efficiency	Customer Rebate	Trade Ally Incentive
Natural Gas Furnace	90-94.9% AFUE ¹	\$300	\$50
	95% or higher AFUE ¹	\$500	\$50
Natural Gas Water Heaters	0.90 UEF ² or higher	\$500	\$50
Smart Thermostats	ENERGY STAR-certified	\$100	-

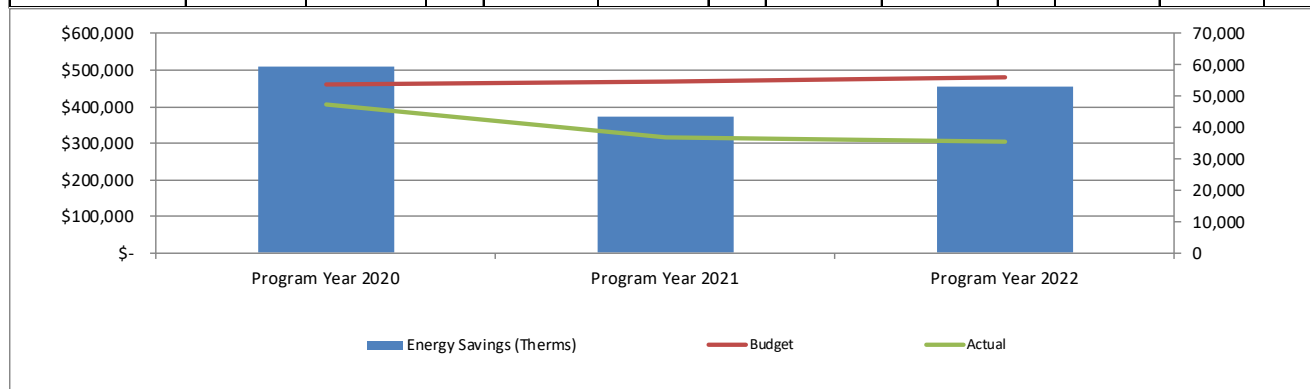
¹ Annual Fuel Utilization Efficiency, ² Uniform Energy Factor

2.3.2 Program Highlights

- This program began in 2010 and has continued through the 2022 Program Year.
- This program was implemented by AOG, with the assistance of local trade allies.
- The ERP captured net energy savings of 52,965 therms in 2022, an increase from 43,551 in 2021.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 1.33.
- Customer satisfaction with the program is very high. This includes interactions with AOG employees, rebate processing times, savings realized from program participation, and ease of the application process.

2.3.3 Program Budget, Savings, and Participants

Equipment Rebate												
Program	Expenditures			Energy Savings (Therms)			Demand Savings (Therms)			Participants		
	Budget	Actual	%	Plan	Evaluated	%	Plan	Evaluated	%	Plan	Actual	%
Program Year 2020	\$ 460,479	\$ 407,599	89%	66,482	59,606	90%	n/a	n/a	-	969	824	85%
Program Year 2021	\$ 466,605	\$ 316,438	68%	70,304	43,551	62%	n/a	n/a	-	1,004	678	68%
Program Year 2022	\$ 478,809	\$ 302,694	63%	74,081	52,965	71%	n/a	n/a	-	1,038	565	54%



2.3.4 Description of Participants

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

2.3.5 Challenges and Opportunities

Per ADM’s recommendations, AOG will review increasing incentives for equipment rebates. The impacts of inflation on the Program have been noticeable to program staff and other stakeholders. AOG will review this as a part of CEE Plan 2024 – 2026 planning.

2.3.6 Planned or Proposed Changes to Program and Budget

In 2022, AOG began employing CLEAResult for rebate processing services. The Company’s acquisition of the Arkansas and Oklahoma assets of CenterPoint Energy resulted in a significant increase in the number of rebates received and, therefore, necessitated this development. This change did not impact the AOG program until the final weeks of December 2022, and even then the final product was still in the early stages of deployment. Therefore, it would be more prudent to include a robust description and analysis of this program addition in AOG’s 2023 Annual Report. Notable achievements will include the development of a bulk rebate form and an upgraded online rebate submission platform for trade allies, builders, landlords, and customers.

2.4 Energy Efficiency Arkansas

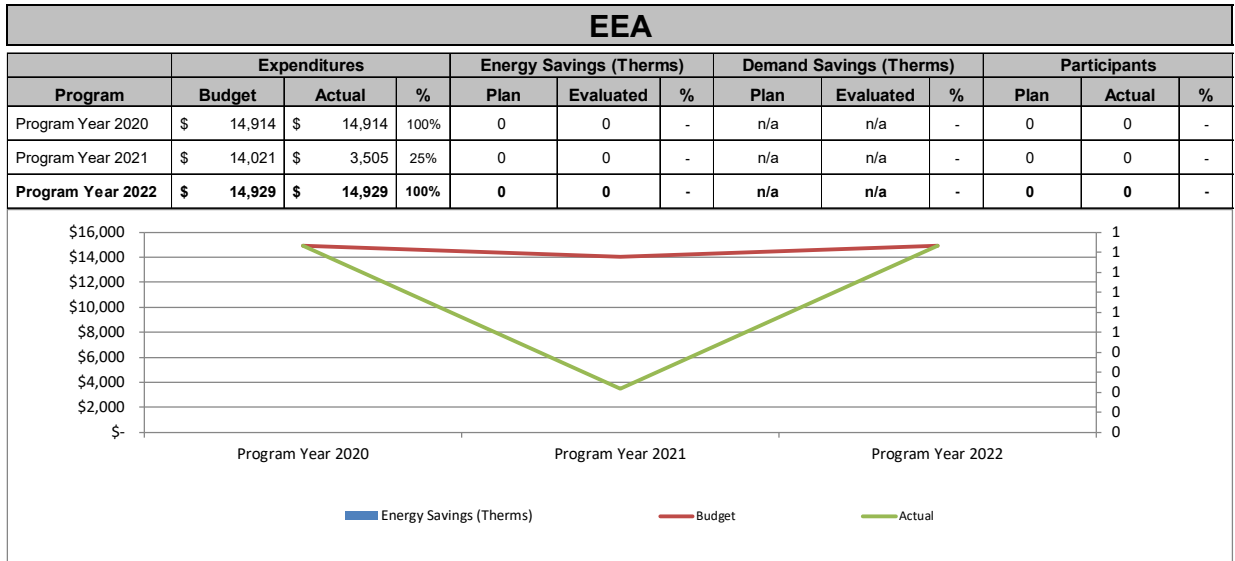
2.4.1 Program Description

The Energy Efficiency Arkansas program provides energy efficiency education and information to all customers, of all classes. This allows customers to make more informed decisions on how they are using energy and explore ways to lower their energy consumption, thereby decreasing demand and energy usage.

2.4.2 Program Highlights

- AOG’s participation in this program was approved on March 31, 2010 and has continued through 2022.
- As the program administrator, the Arkansas Energy Office was able to accomplish a successful EE education campaign, utilizing funds from the participating utilities.

2.4.3 Program Budget, Savings, and Participants



2.4.4 Description of Participants

The Energy Efficiency Arkansas program targets all utility customers in Arkansas.

2.4.5 Challenges and Opportunities

The challenges and opportunities of the Energy Efficiency Arkansas program are better addressed by the Arkansas Energy Office.

2.4.6 Planned or Proposed Changes to Program and Budget

Any planned changes to the program or budget are better addressed by the Arkansas Energy Office.

2.5 Low-Income Pilot Program

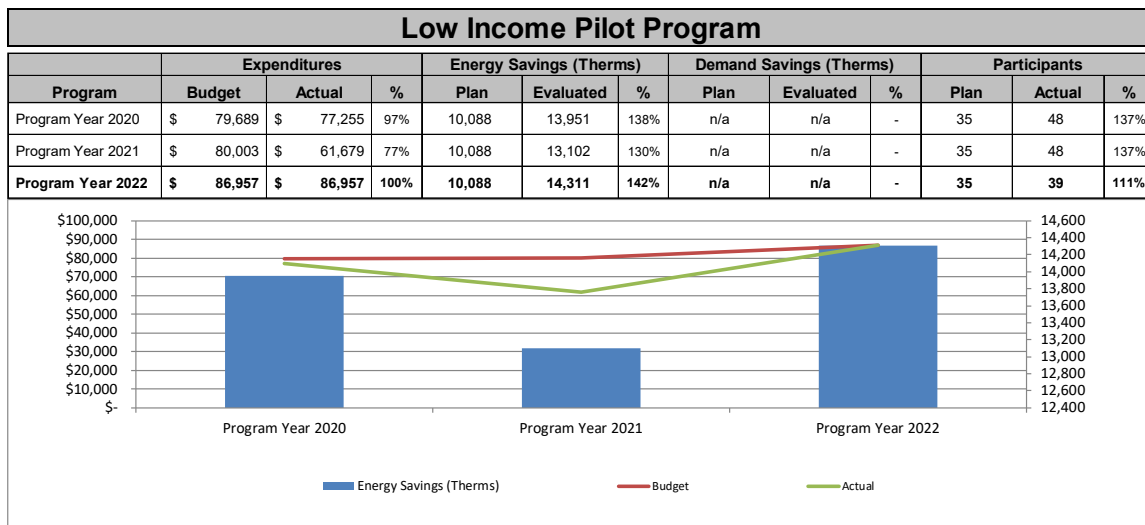
2.5.1 Program Description

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

2.5.2 Program Highlights

- The program was developed to be compliant with Act 1102 of the 91st Arkansas General Assembly.
- This program began on January 1, 2020.
- The program was implemented by CLEAResult.
- LIPP is very successful. In 2022, the program weatherized 39 homes and captured net energy savings of 14,311 therms.
- The program is cost beneficial as evidenced by a Total Resource Cost Ratio of 2.21.
- The program is popular and requires a minimal marketing budget.
- As CLEAResult also implemented the AOGWP, many of the benefits realized in that program were also garnered within the LIPP. A notable improvement over 2020 is the increase in average savings per home in respective measure categories. In 2022, measures installed per project and savings achieved per project increased from 1.67 to 1.82, and 328 to 367, respectively.
- AOG drastically increased health and safety spending from \$18 per home in 2021 to \$250 per home in 2022.
- Program survey respondents “very satisfied” with the program overall increased from 70% in 2021 to 85% in 2022.

2.5.3 Program Budget, Savings, and Participants



2.5.4 Description of Participants

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

Annual Household Income Limits (before taxes)

Household Size*	Maximum Income Level (Per Year)
1	\$21,870
2	\$29,580
3	\$37,290
4	\$45,000
5	\$52,710
6	\$60,420
7	\$68,130
8	\$75,840

*For households with more than eight people, add \$7,710 per additional person. Always check with the appropriate managing agency to ensure the most accurate guidelines.

2.5.5 Challenges and Opportunities

AOG will continue to examine methods of increasing benefits for customers through the LIPP. Smart thermostats have been shown to be cost-effective and successfully implemented in similar programs and may provide additional benefit to LIPP customers. AOG will also examine wall insulation as a potential measure, although costs and installation barriers have been impediments to successful implementation in the past.

2.5.6 Planned or Proposed Changes to Program and Budget

There are no planned changes to the program or budget at this time other than the investigation of increasing goals.

3.0 Supplemental Requirements

3.1 Staffing

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

3.2 Stakeholder Activities

AOG personnel attended and provided numerous training and outreach events throughout the 2022 Program Year. AOG personnel attended several seminars covering energy efficiency topics and also conducted training sessions both internally and externally. Training was implemented to educate AOG personnel about the EE programs, and external training was provided to EE program participants, trade allies, and stakeholders to raise awareness and ensure that program procedures are followed.

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

Internal Training

Event No.	Start Date	Class	Class Description	Training Location	Sponsor	No. of Attendees (A)	Length of Session (B)	Training Session Man-Hours (A x B)	Any Certificates Awarded? (Y or N)	# of Certificates Awarded
1.	3/10/22	Low Carbon Study Results	Summary of new Net-Zero Emissions Opportunities for Gas Utilities study	Virtual	American Gas Association	1	1	1	N	0
2.	9/1/22	Natural Gas Air Conditioning Overview	Intro to gas cooling with Eric Burgis	Virtual	Energy Solutions Center	2	1	2	N	0
3.	9/19-20/22	AGA Conference	Gas conference; Upcoming technologies and educational training	In person	American Gas Association	1	8	8	N	0
4.	10/11/22	Scoop Meeting	TA Training	In person	SUA	1	2	2	N	0
5.	10/12/22	AAEA Conference	Gas/Electric Forum	In person	AAEA	1	6	6	N	0
6.	10/18-20/22	CLEAResult Energy Forum	Round Table Discussions between all Utilities on better working relationships and gas/electric technologies and trainings	In person	CLEAResult Consulting	1	10	10	N	0
7.	11/2/22	AAEE + ASHRAE Trade Show	Industry Energy Forum-Gas/Electric Technologies and Educational Trainings	In person	AAEA + ASHRAE	1	5	5	N	0
								0	N	0
Totals:	Events:					8		34		0

External Training

Event No.	Start Date	Class	Class Description	Training Location	Sponsor	*No. of Attendees (A)	Length of Session (B)	Training Session Man-Hours (A x B)	Any Certificates Awarded? (Y or N)	# of Certificates Awarded
1.	2/11/22	Fort Smith Builders Association Home Show	Represent AOG to local community	Fort Smith	Fort Smith Homebuilders	9	24	216	N	0
2.	3/23/22	Weatherization Contractor Lunch	Meet with Wx Contractors for appreciation lunch	Fort Smith	AOG & CLEARresult	30	2	60	N	0
								0	N	0
Totals:	Events:					39		276		0

*There were numerous attendees present at each conference, trade show, and outreach event. The values in the *No. of Attendees* column reflects the number of AOG personnel and/or AOG contractor personnel who provided education at these events.

3.3 Information Provided to Consumers to Promote EE

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

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

4.0 Appendix A: Carbon Calculator Scenarios

The TRC results in the PY 2022 report include natural gas benefits and Non-Energy Benefits (NEBs) in alignment with prior program years:

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

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

Emissions Calculations

Gas	CO2 Equivalent
CO2	1

Conversions for listed units

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

Emissions factors for natural gas

Fuel	kg CO2 per mmBtu
Natural Gas	53.06

Local emissions factors for electricity in Arkansas

Region	Non-Baseload Emission Factors	
	CO2 lb / MWh	
SPSO (SPP South)	1,662.5	
Utility Specific (Enter value here==>)		

Choose the region using dropdown (in cell A18)

Calculated emissions per unit

CO2 tons / kWh	0.00075
CO2 tons / therm	0.00531

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

Utility's lowest value

Utility's median value

Utility's highest value

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

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

5.0 Appendix B: EM&V Contractor Reports