Oklahoma Comprehensive Demand Program Portfolio

2023 Annual Report

In Accordance with Annual Reporting Requirements

Oklahoma Corporation Commission Utility Rules

165:35-41-7

July 1, 2024

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1.0 Executive Summary

Oklahoma Gas and Electric Company ("OG&E" or "Company") is submitting its Comprehensive Demand Program Portfolio Annual Report for 2023. This report is required to be submitted with the Oklahoma Corporation Commission ("OCC" or "Commission"") by July 1, 2024, pursuant to the Annual Reporting Requirements in OAC 165:35-451-7.

On July 8, 2021, OG&E filed a comprehensive portfolio of energy efficiency programs with the Oklahoma Corporation Commission for Program Years 2022-2024. This portfolio was approved by OCC Order No. 723207 in Cause No. PUD 202100121 on February 1, 2022. The focus of this report will be on the second Program Year ("PY2023"), spanning from January 1, 2023, to December 31, 2023, of the implementation cycle.

Below is a summary of the 2023 Demand Program Portfolio results.

2023 Summary of Results	Projected (Filed)	Actual	% Achieved
Expenses (with Labor)	$39,397,286	$38,762,900	98%
Net Energy Savings (kWh)	168,002,055	179,122,489	107%
Net Demand Savings (kW)	34,746	29,388	85%

Cost Effectiveness - TRC	1.36	2.19
Cost Effectiveness - PACT (UCT)	1.33	3.09
Cost Effectiveness - RIM	0.31	0.45
Cost Effectiveness - PCT	6.96	6.48
Cost Effectiveness - SCT	1.97	3.88

Levelized Cost per kWh	$0.035	$0.031

2.0 Demand Programs

OG&E offered customers four programs. Two of these programs were offered to residential customers, one to commercial/industrial and an educational program to all customers one for residential/commercial/industrial. The programs offered are the:

1. Home Energy Efficiency Program ("HEEP")
2. Weatherization Residential Assistance Program ("WRAP")
3. Commercial Energy Efficiency Program ("CEEP")
4. Education Program ("EP")

2.1 Demand Program Details

Program	Date Program was started or revised	Number of projects*	Actuals		
			Program Expenditure	Verified Net Energy Savings	Verified Net Demand Savings
HEEP	January 2010	139,844	$11,528,635	38,440,636	6,985
WRAP	January 2008	3,334	$6,249,419	13,023,462	3,284
CEEP	January 2013	927	$18,207,050	127,658,392	19,118
Total		144,105	$35,985,103	179,122,489	29,388

**The HEEP Number of projects includes lighting packages, (i.e., 72,540 packages were distributed to the Food Banks).*

Program	Date Program was started or revised	Number of Potential Customers	Customer Category	Number of Projects Completed in 2023
HEEP	January 2010	701,619	Residential Customers	139,844
WRAP	January 2008	211,664	Low Income Residential Customers	3,334
CEEP	January 2013	121,018	Commercial/Industrial Customers	927
Education	January 2010	822,637	All Customers	17

2.2 Summary of Demand Program Costs

Projected

Program	Projected Program Costs (Filed)						
	Administrative	Inducements	Education & Marketing	Program Delivery	EM&V	Allocated Labor	Total
HEEP	$177,142	$6,358,956	$122,180	$4,827,251	$375,939	$260,000	**$12,121,470**
WRAP	$150,000	$5,471,145	$155,000	$100,329	$190,000	$170,000	**$6,236,474**
CEEP	$150,000	$9,594,352	$130,000	$7,554,991	$450,000	$230,000	**$18,109,342**
Education	$0	$0	$0	$800,000	$0	$80,000	**$880,000**
Planning	$100,000	$0	$0	$0	$0	$0	**$100,000**
Research & Development	$1,950,000	$0	$0	$0	$0	$0	**$1,950,000**
Total	**$2,527,142**	**$21,424,453**	**$407,180**	**$13,282,571**	**$1,015,939**	**$740,000**	**$39,397,286**

Actual

Program	Actual Program Costs						
	Administrative	Inducements	Education & Marketing	Program Delivery	EM&V	Allocated Labor	Total
HEEP	$125,173	$6,538,206	$87,711	$4,265,199	$375,145	$137,201	**$11,528,635**
WRAP	$123,908	$5,551,413	$200,318	$59,317	$208,786	$105,677	**$6,249,419**
CEEP	$139,675	$9,821,958	$104,317	$7,490,217	$430,637	$220,246	**$18,207,050**
Education	$0	$0	$0	$712,329	$0	$120,325	**$832,653**
Planning	$76,826	$0	$0	$0	$0	$0	**$76,826**
Research & Development	$1,796,770	$0	$0	$0	$0	$71,547	**$1,868,317**
Total	**$2,262,352**	**$21,911,577**	**$392,346**	**$12,527,061**	**$1,014,568**	**$654,996**	**$38,762,900**

2.3 Summary of Energy and Demand Savings

Projected

Program	Projected (Filed)	
	Energy Savings (kWh)	Demand Savings (kW)
HEEP	38,639,456	6,621
WRAP	10,918,216	3,807
CEEP	118,444,383	24,318
Total	168,002,055	34,746

Actuals

Program	Actuals			
	Gross Energy Savings (kWh)	Gross Demand Savings (kW)	Verified Net Energy Savings (kWh)	Verified Net Demand Savings (kW)
HEEP	58,418,689	10,512	38,440,636	6,985
WRAP	13,046,111	3,288	13,023,462	3,284
CEEP	133,284,741	20,122	127,658,392	19,118
Total	204,749,541	33,922	179,122,489	29,388

2.4 Summary of Cost Effectiveness and Incentives

Projected

Cost Effectiveness Tests - Projected (Filed)					
Program	**TRC**	**UCT/PACT**	**RIM**	**PCT**	**SCT**
HEEP	1.63	1.40	0.30	11.07	2.66
WRAP	1.34	1.22	0.39	3.76	2.05
CEEP	1.23	1.32	0.29	6.66	1.58
Total	**1.36**	**1.33**	**0.31**	**6.96**	**1.97**

Projected Incentive	$5,602,093

Actuals

Cost Effectiveness Tests - Actuals					
Program	**TRC**	**UCT/PACT**	**RIM**	**PCT**	**SCT**
HEEP	2.44	2.77	0.47	7.67	5.19
WRAP	2.84	2.52	0.52	5.85	4.43
CEEP	2.14	3.95	0.44	6.18	3.74
Total	**2.19**	**3.09**	**0.45**	**6.48**	**3.88**

Actual Incentive	$5,522,664

3.0 Summary of Demand Portfolio Impacts

3.1 Summary of the Cumulative Portfolio Impacts

Program Year	Actual Costs	Filed Savings (kWh)	Verified Net Actual Savings (kWh)
2011	$18,201,000	45,492,000	60,743,000
2012	$14,515,000	45,492,000	65,902,000
2013	$40,939,000	90,315,000	82,315,000
2014	$47,352,000	137,112,000	103,076,000
2015	$42,336,000	143,917,000	100,412,000
2016	$33,342,000	95,524,000	133,011,000
2017	$37,587,000	96,994,000	147,479,000
2018	$37,225,000	92,349,000	173,918,000
2019	$35,111,399	158,009,167	155,696,390
2020	$33,964,158	158,085,474	168,539,038
2021	$35,474,777	158,160,901	170,956,762
2022	$36,805,975	170,407,432	185,050,738
2023	$38,762,900	168,002,055	179,122,489

3.2 Summary of the Portfolio Levelized Costs

Program	Levelized cost/kWh
Demand Portfolio	0.031
HEEP	0.038
WRAP	0.054
CEEP	0.023
Residential Sector	0.042
Commercial Sector	0.023
*Demand Portfolio includes Planning, Regulatory, and R&D Costs	

3.3 Summary of Demand Portfolio Funding and Energy Savings

Demand Portfolio Funding (DPF)	Total Annual Electric Revenue (TAER)	% DPF/TAER
$38,762,900	2,193,301,383	1.8%

Demand Portfolio Energy Savings (DPES) MWh	Total Annual Energy Sales (TAES) MWh	% DPES/TAES
179,122	27,218,839	0.658%

3.4 Summary of the Portfolio Lost Revenues

The PY2023 projected Lost Net Revenues (Filed) was $13,815,954. Actual Lost Net Revenues amounted to $13,547,701.

3.5 Utilities Annual Growth

Year	Annual Metered Growth Rate		Average Growth Rate		
	Energy	Demand	Residential	Commercial	Industrial
2021	25,095,563	6765	8,822,705	6,114,316	7,394,728
2022	27,295,200	7351	9,617,976	7,179,624	7,592,560
2023	27,218,839	7432	8,892,773	7,975,768	7,446,685
Average Growth Rate (2021-2023)	3.5%	5.5%	2.4%	11.9%	0.0%

3.6 Reduced Emissions and Water Consumption at Generation

2023	SO_2		NO_X		CO_2e		Fresh Water	
Portfolio	31.4	Tons	84.5	Tons	115,242	Tons	25.5	million gallons
Factors	0.3	lb/MWh	0.9	lb/MWh	1,187	lb/MWh	131.2	gallons/MWh

Customer Avoided Water purchase

In PY2023 residential water savings measures reduced residential customers' water consumption by 22,272,542 gallons. The water bill savings associated with the reduction in water consumption are applied as Non-Energy Benefits ("NEBs") in the AEG cost benefit analysis.

4.0 Details of Demand Programs

4.1 Weatherization Residential Assistance Program

The OG&E Weatherization Residential Assistance Program is a program designed for low-income residential customers. Customers can enroll in the program by calling the OG&E call center or by logging on to OG&E's website (OG&E - Weatherization (oge.com)). This program allows the customer to participate in measures to assist in managing energy consumptions and therefore cost. OG&E residential customers are eligible to apply for WRAP if they own, rent, or lease their single-family home, duplex, or mobile home; have incomes at or below $60,000; or are owners of multifamily units whose rental units are 66% occupied by hard-to-reach customers pursuant to OAC 165:35-41-3 definition of "Hard-to-reach customers." WRAP is designed to improve the thermal envelope of the dwelling, thereby decreasing the amount of energy consumed and improving the comfort and safety of the home.

OG&E partnered with Central Oklahoma Habitat for Humanity to assist the non-profit agency in providing weatherization services to qualified OG&E customers. Additional homes were weatherized through a joint program made possible with funding from OG&E and Oklahoma Natural Gas ("ONG").

In 2023, OG&E weatherized 3,334 homes at an average cost of $1,874 per home. OG&E and ONG jointly weatherized 425 homes. One challenge and possible opportunity is that while the customers may be eligible for WRAP, the home may not qualify due to program restrictions for health and safety reasons. For example, OG&E will not weatherize a home that has unvented combustion space heaters or open flame heaters as its main source of heat. The challenge is to determine how to fix or modify these homes so that they can be weatherized safely, and still be cost effective. Through the WRAP enhancement R&D pilot; explained in detail in section 4.5, WRAP introduced the Repair to Qualify ("RTQ") option that allowed the program to perform low-cost repairs on customer's homes, which then met the requirements for the homes to receive weatherization as well.

4.2 Home Energy Efficiency Program

The Home Energy Efficiency Program consists of five program channels to access the residential customer market. The Residential Solutions channel addresses single-family and multi-family homes with efficient lighting, envelope, and other mechanical system measures. The heating,

ventilation, and air conditioning ("HVAC") Tune-up channel addresses HVAC units across all segments of the residential market. The Consumer Products channel offers rebates on lighting and other household equipment at retail point-of-purchase and food pantries for residential customers. The School Outreach, a.k.a. LivingWise™, channel offers educational materials and kits with energy saving measures for students to take home and install. The Positive Energy New Home Construction channel addresses new residential homes constructed with comprehensive energy efficient standards.

The residential solutions channel experienced over 3,300 face-to-face interactions with OG&E customers in their homes or apartments, while supplying them with direct install materials and education on what Energy Efficiency means. The knowledge and value of Energy Advisors and Senior Field Representatives was expanded by each of them acquiring BPI certifications. The effort is more in line with industry standards and grows the possibilities of what both single-family and multi-family channels can offer OG&E customers.

PY2023 measure highlights include 1,214 multi-family units received direct install materials consisting of LEDs, advanced power taps, and water measures. There were 1,297 in-home assessments completed, with 8 of those being performed virtually, 482 attic insulation rebates, 378 window submissions, 164 EV-Level2 charger applications, 2,445 HVAC tune-ups completed, with 23 trade allies participating. 4,600 Air & Duct sealing projects in multi-family units were performed along with 268 rebates for new A/C units. In Consumer Products there were eight measures available – 999 smart thermostats, 969,179 total LED bulbs (260,064 of those bulbs distributed to Food Banks), 22,597 advanced power strips (7,524 of those power strips distributed to Food Banks), 2,236 bathroom ventilation fans, 431 A/C window units, 1,047 room air purifiers, 1,385 water dispensers discounted through 41 different retailer companies with 192 locations represented. The Consumer Products channel increased Foodbank participation this year due to an increased need of about 40 percent. The LivingWise™ Schools Outreach channel distributed 8,811 kits to teachers and students.

1,347 Positive Energy Homes were constructed with 36 builders participating. Of those homes, 46 qualified for the Ground Source Heat Pump Bonus and five for the Electric Vehicle Ready Bonus. In PY2022, Positive Energy New Home Construction redesigned the program and launched a tiered structure as well as a multi-family component. The tiered structure consists of two categories, homes larger than 1800 square feet and homes equal to or smaller than 1800 square feet, each with three levels based on kWh saved. The revamped tiered structure was well received by home builders and raters alike. This redesign has been running extremely well in PY2023 and is expected to see continued success in PY2024.

Positive Energy New Home Construction

Program	Homes	Program Savings	
	Number of Homes	Energy Savings (kWh)	Demand Savings (kW)
Positive Energy New Home Construction	1,347	2,016,178	674

Program	Actual Program Costs						
	Administrative	Inducements	Education & Marketing	Program Delivery	EM&V	Allocated Labor	Total
Positive Energy New Home Construction	$35,724	$1,063,052	$14,261	$693,482	$60,995	$6,936	**$1,874,449**

Program	Cost Effectiveness Tests - Actuals				
	TRC	PACT	RIM	PCT	SCT
Positive Energy New Home Construction	1.18	1.54	0.48	2.30	2.21

In addition, for both residential and commercial customers, OG&E planned to implement a proactive LED lighting replacement incentive on streetlights or security lights. PY2022 and PY2023 were used to establish the internal processes and procedures. The actual implementation of the rebates is projected to occur in 2024, which will cover the $177.58 conversion charge that customers would incur by replacing their streetlight or security light prior to burnout.

4.3 Commercial Energy Efficiency Program

The Commercial Energy Efficiency Program consists of six channels of customer participation opportunities. The Commercial & Industrial Solutions (“C&I Solutions”) channel targets prescriptive and custom measures for commercial customers. The HVAC Replacement & Tune Up channel offers tune-ups for HVAC systems. The Schools and Government Efficiency (“SAGE”) channel is designed to overcome the barriers that are unique to that market segment. Small

Business Midstream ("Midstream") discounts efficient lighting at point-of-purchase. Small Business Direct Install ("SBDI") targets small businesses for turn-key efficiency solutions. Continuous Energy Improvement ("CEI") targets large customers and provides operational, behavioral, and other low/no-cost energy-saving opportunities. Additions to the CEEP program in this portfolio include commercial cooking measures and the Fleet Electrification Management ("FEM"), which supports customers in navigating how to transition from a traditional internal combustion engine fleet to an electric vehicle fleet.

CEEP continues to achieve monumental savings with 2023 coming in at over 107% of its gross annual goal. The SBDI, CEI and Midstream channels finished well beyond expectations by greatly exceeding their annual gross goals by 123%, 114% and 126%, respectively.

In PY2023, 196 different customers participated with 2,694 HVAC units tuned up; 7 trade allies completed the work. OG&E provided incentives to 20 school districts, and 16 city, state, and municipal customers, using 8 trade allies. There were 2,476 projects using 16 distributors in the Midstream channel, plus 52 projects for Small Business with 10 trade allies. Large C&I had 135 customers participate with 28 trade allies completing 145 projects. CEI partnered with 17 school districts and 23 industrial customers which accounted for over 314 buildings. The commercial cooking pilot finished 55 kitchen projects and paid $52,240 in inducements. FEM partnered with 5 school districts to create Fleet Electrification Roadmaps for their school bus fleets, helping them lay the groundwork for their first steps along the school bus electrification journey. The roadmaps included plans for over 30 school buses. The portfolio of future opportunities includes additional complex projects, attracting federal funding to Oklahoma based opportunities, more comprehensive measures, new custom measures, and new vertical markets.

4.4 Education Program

The Education Program goal is to help customers make informed decisions about long-term energy efficiency and encourage participation in programs that will assist them in managing their energy costs. The Education Program provides presentations to all customer classes, helping them to make informed decisions about energy use. This program was able to actively engage with residential customers and communities across the OG&E service territory. Similarly, the C&I sector received educational services tailored to their needs. Roughly 17 community events were held in 2023 at various locations across the service territory.

The Education Program was able to host three in-person National Energy Education

Development (NEED) workshops throughout the OG&E territory in 2023. Those locations included Ada, Ft. Gibson, and Alva, Oklahoma where up to 35 Teachers from each district were able to attend and take part in a series of hands-on STEAM based experiments and exercises. The teachers also received NEED *Science of Energy* experiment kits for classroom use. Hosting NEED locally allowed us to double the number of teachers that could attend, which leads to a greater impact to our schools and the students.

OG&E's commitment to energy efficiency education shines through its annual Poster Coloring Contest, titled "How do you save energy at home and at school." In this contest, students in grades 3rd and 4th are invited to draw and color pictures illustrating how they contribute to energy conservation both at home and in their school environment. By engaging students in this creative endeavor, OG&E not only fosters awareness but also provides an opportunity for teachers to discuss the importance of energy-saving practices, distinguishing them from other conservation methods like recycling and composting. To facilitate the contest, OG&E supplies poster board coloring paper, which makes it easier to laminate the winning entries.

The success of this program drives efforts to expand school participation during Energy Efficiency Month in October.

Winning posters are selected based on the child's energy-saving depiction, demonstrating their understanding of the concept. These young artists receive an EE OG&E Branded medal and an OG&E LED Thunder night light. The winning posters are laminated and displayed at the school. Awards are typically presented during school events, raising awareness among families.

#	Name of Group	Group Size
1	Food Bank	500
2	Tinker Earth Day	300
3	Arts Festival	500
4	State Fair Senior Day	200
5	NEED Conference Ada	35
6	NEED Conference Ft. Gibson	35
7	NEED Conference Alva	35
8	Foundations (4) – New Hire Program OGE	200
9	Annual Home Builders Association Summit	150
10	Sunbeam Family Services Event	200
11	Boys and Girls Club Event	110
12	United Way Heaters	100
13	4th Grade Poster Coloring Contest	200
14	Citizens Pottawatomie Nation EE tips Workshop	50
15	Marietta Senior Health Fair Day	35
16	OKC Dodgers	2,000
17	OKC Thunder	12,000

4.5 Research and Development

The R&D program approved by the Oklahoma Corporation Commission in Case No. PUD 202100121 as part of the current 2022-2024 demand portfolio includes four projects:

1. Utility-scale battery pilot to manage electric vehicle supply equipment ("EVSE") rapid charging loads ("Battery Pilot")
2. Managed flexible load technology pilot ("Flex Load Pilot")
3. WRAP enhancement pilot ("WRAP Pilot")
4. Schools renewable technology pilot ("Schools Pilot")

The Battery Pilot is a continuation of the utility-scale battery pilot from the last portfolio approved in Cause No. PUD 201800074. In that previous pilot, OG&E established the control mechanisms necessary to test and efficiently manage the fast-charging scenarios. OG&E has been successful in the controlled lab environment in identifying the most efficient battery dispatch methods while establishing the foundation for operational safety, grid interoperability, and grid security. Through this project, OG&E is determining how Battery Energy Storage Systems (BESS) can safely and securely operate and support Level 3 charging stations on highway corridors or at commercial fleet charging facilities in a manner that offsets demand (capacity or kW) while also improving load factor on the associated circuit(s).

The Flex Load Pilot is evaluating the ability of new technologies (such as internet connected electronic devices and dynamic control algorithms) and behavior-oriented rate structures and program designs to encourage customers to shift load.

The WRAP Pilot is assisting underserved and hard to reach customers with minor repairs needed at their homes so that they can become qualified and eligible to participate in OG&E's weatherization program.

The Schools Pilot is assessing how utilizing varying solar and energy storage technologies can result in peak demand reduction, increased usage of clean energy, reduced waste of energy, and improved operational costs, combining the most effective technologies, rates, and applications with related curriculum materials being made available to the students.

Project #1 – Utility-Scale Battery Pilot

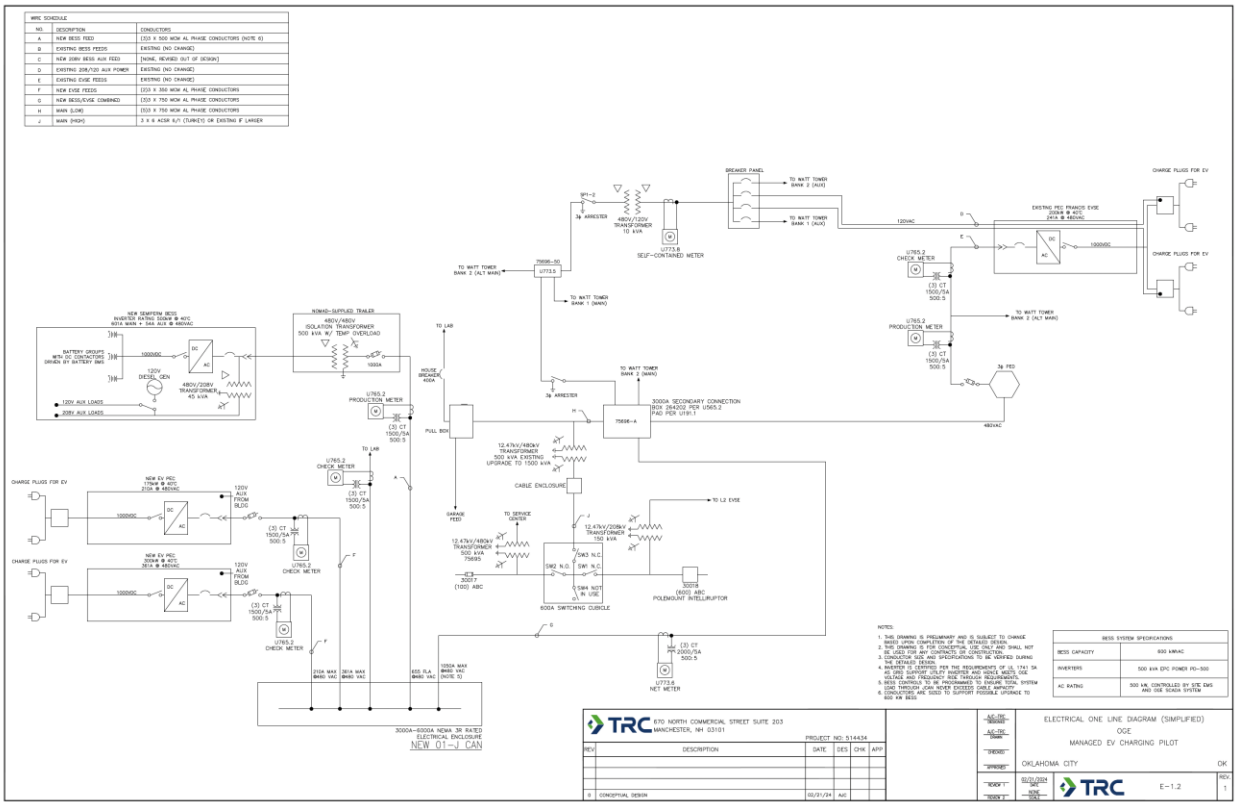
The Battery Pilot seeks to provide a deeper understanding of the potential dispatch and impact of batteries in real-world applications as an EE measure, battery safety and how to manage it, and how batteries can be integrated into OG&E's distribution system. The pilot hypothesis is:

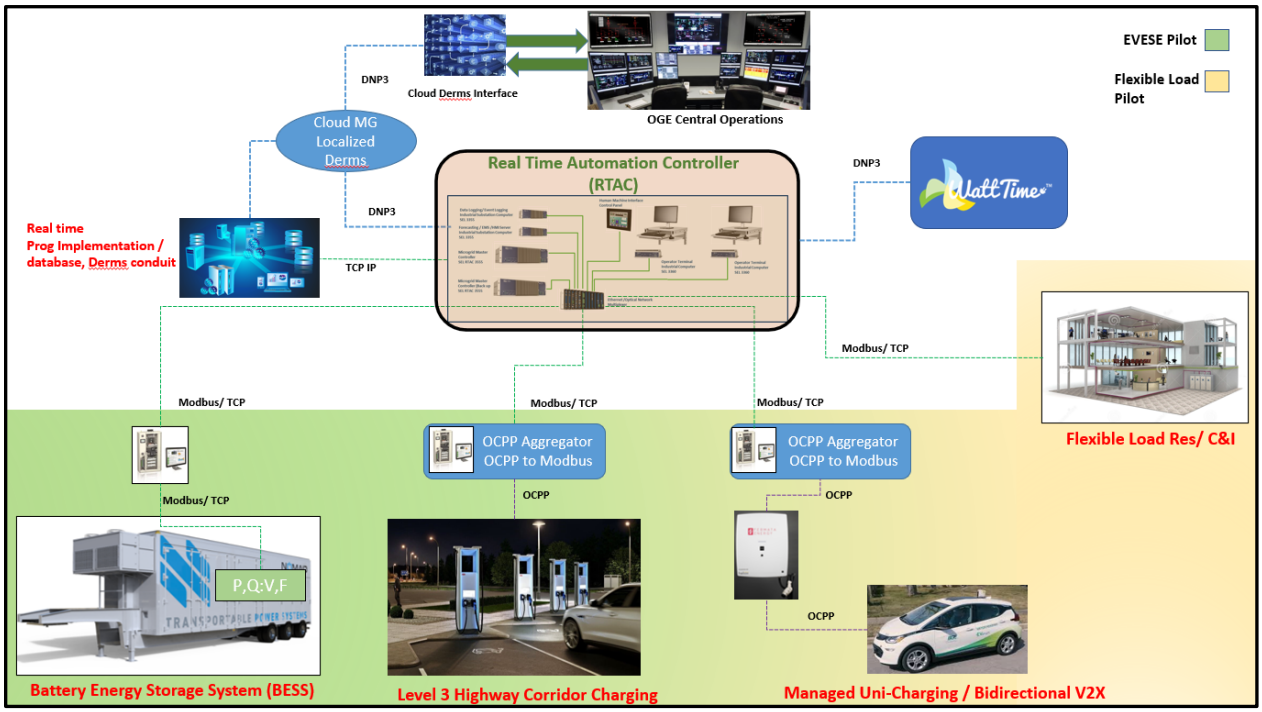
1. Battery storage technology deployed in a real-world field environment can be safely and securely operated to support level-3 charging stations on highway corridors or commercial fleet applications in a manner that offsets demand (capacity or kW) while also improving the load factor on the associated circuit(s).

OG&E continues to conduct the Battery Pilot by exploring deployment and dispatch of batteries for demand load reduction and customer energy cost savings associated with electric vehicle ("EV") charging.

2023 activities and results included:

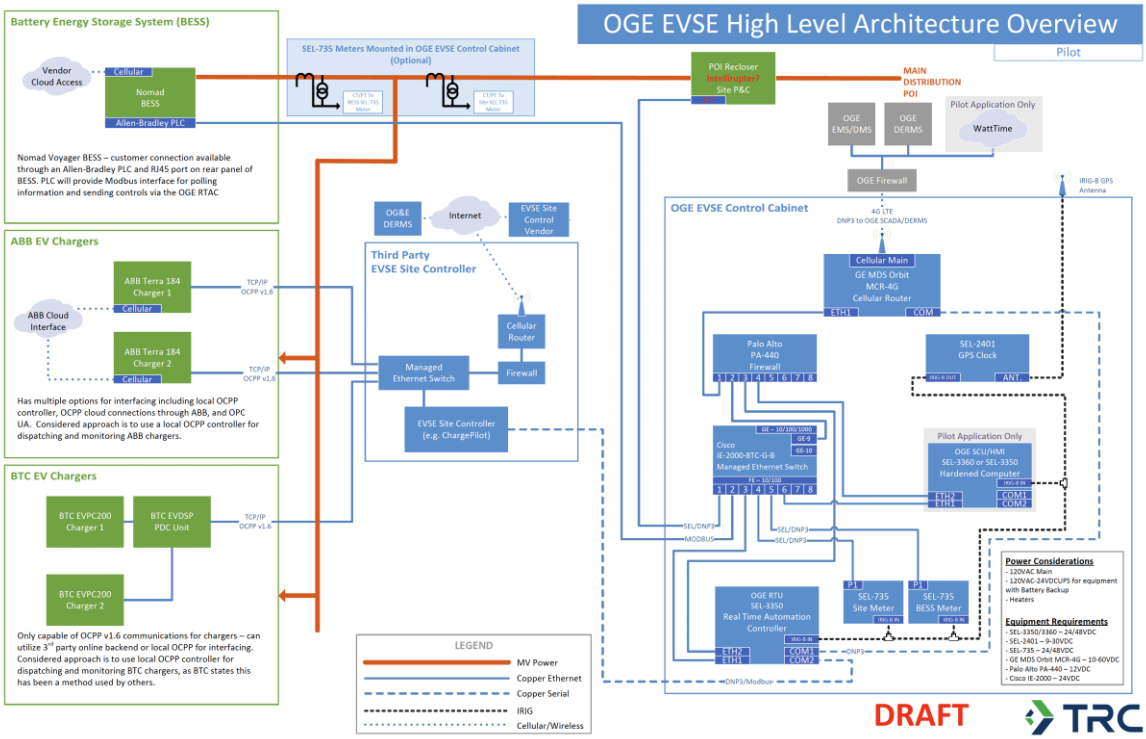
- The Advanced Technologies Lab (ATL) coordinated with Supply Chain, Engineering, and Controls teams on the selection of NOMAD Power to deliver a Battery Energy Storage System (BESS) that will be paired with level 3 electric vehicle supply equipment (EVSE) representative of the future highway corridor EVSE charging site operation
    - **Result**: 500KW/664kWh BESS procured to coincide with NEVI requirements Delivery of the system in early 2024
- Site, civil, and construction work completed
    - **Result**: The pre-engineering and site construction of the pilot project located at the OG&E Advanced Technologies Lab is completed and awaiting delivery of the system
- Final BESS design completed





- **Result**: High level design of the systems / integrations are completed

- Controls integrations high-level design for communications between BESS, EVSE, and OG&E systems



  - **Result**: The conceptual communication and controls architecture design was developed to be the blueprint for detailed engineering design for systems dispatch. The design incorporates safety and security measures to manage the BESS, offset EV charger demand, and inject clean, renewable energy (when available) via OGE SCADA and DERMS.

Overall results:

- OG&E continued to observe battery cost trends in light of the previous conclusion that battery systems must drop below the installed cost of the laboratory demonstration system (~$1000/kWh) and anticipates that the cost threshold will be achieved within the next 2-3 years. However pricing trends over the last year have been higher than expected.

- The pilot moved along successfully in 2023 for completion in 2024.

Project #2 – Managed Flexible Load Electric Device Technology Pilot

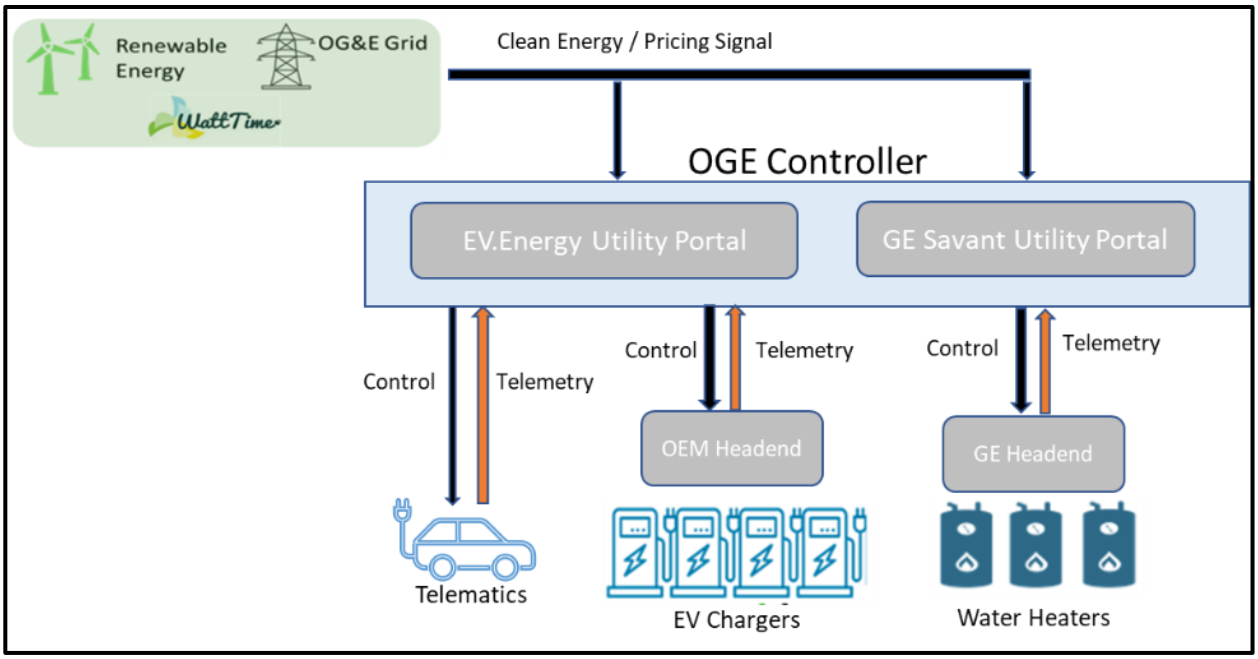
This Flex Load Pilot is examining the ability of smart hardware, software, and behavioral-based tariff designs to collectively deliver value to customers and the grid by participating in more effective, efficient, or cleaner grid operation. Specifically, it is investigating the capabilities of applying smart control algorithms to electric devices to procure peak demand reduction, clean energy, fuel savings, and/or overall system capacity savings. A variety of algorithms and smart technologies are being tested to develop a better understanding of how to optimize effective, clean, and efficient use of flexible electro-technologies through smart controls.

This R&D project was initiated in 2022, and the pilot hypothesis was:

1. Smart-electro-technologies coupled with behavioral pricing mechanisms will result in increased customer participation in more efficient and/or cleaner use of energy.

2023 activities and results included:

- Completed evaluation in the OG&E Advanced Technologies Lab utilizing the test system to fully understand the configurations and data surrounding both the water heaters and EVSE hardware, along with a design for how the location, control, and monitoring needed to be developed for field deployment
    - **Result**: Confirmed capabilities and functional gaps of lab technologies to emulate sending of control signals and monitoring of devices in the field. Identified required integration points necessary for lab technologies to exchange data between systems to validate device performance.
- Completed pilot program design for both the Managed Water Heating and the Managed EV Charging tests



- **Result**: High level design of the systems / integrations completed

- Completed recruitment of participants for the pilot
  - **Result:** Managed Water Heating (WH) participants were selected through an open request issued over corporate communications to all OG&E employees. Interested participants were asked to complete an online survey to capture information on their existing water heater (fuel source, age), home occupancy, and other factors. Participants were selected based on a first come first serve basis while ensuring a diversity of occupancy levels. Through this process 10 initial participants were selected.
  - EV participants were identified through an existing listing of employee EV owners maintained by OG&E. The pilot team held information sessions with these employees to identify candidates willing to participate and with a diversity of vehicle types (including both full battery electric vehicles (BEVs) as well as plug in hybrid vehicles (PHEVs)).

- Procured and deployed hardware and software systems to be evaluated under the pilot
  - **Result:** Once all participants were selected and had executed pilot participation agreements, OG&E inspected the residence of each participant to ensure readiness for installation. Some participants had to be removed from further consideration due to physical constraints associated with the device installation

requirements. In those cases, a new participant was added. To ensure proper technology deployment and setup, OG&E utilized a third-party contractor to procure and install the Chargepoint chargers and GE water heaters. OG&E attended installations and facilitated set up of the WH and EV mobile apps for participants.

- Executed initial field pilot system tests
    - **Result:** Conducted initial tests of field pilot use cases with integration of data between systems/ devices

Overall results:

- Results completed in the OG&E Advanced Technologies Lab indicated that applying smart-electro-technologies coupled with smart control algorithms can procure peak demand reduction, clean energy, fuel savings, and/or overall system capacity savings
- Field pilot successfully deployed to test users with continued data capture, analysis and projects results to be completed in 2024
- Continued to observe cost trends in EVs and EVSE in order to understand distribution system infrastructure needs in relationship to forecasted EV adoption

Project #3 – WRAP Enhancement Pilot

Two initiatives will be pursued for this R&D pilot: Repair-to Qualify ("RTQ") and offering Enhanced Measures designed to increase the value customers will receive in the WRAP offering making it more accessible to under-served and hard-to-reach participants. Historically, 25% of the WRAP disqualifications related to minor repairs. The pilot will handle minor restorations, including but not limited to: Health and safety, Flue, HVAC, and roof flashing repairs.

The enhanced measures not currently included in WRAP are HVAC Tune-ups, repairs, and replacements, window AC replacements with mini-splits or Air Source Heat Pumps, and Water Heater Load Controls. This pilot seeks to offer these measures to enhance health, safety, and comfort for customers, as well as, to reduce energy use and costs.

2023 activities and results include:

The RTQ pilot continues to be an incredibly successful offering to customers that would have otherwise been disqualified. In 2023, the RTQ pilot added 560 homes and over 1.6 million kWh savings to the program. Due to the overwhelming success, the plan is to transition this pilot into

an offering under the Weatherization program in the 2025-2029 Portfolio filing.

Project #4 – Schools Renewable Technology Pilot

Like different commercial segments, schools are becoming increasingly interested in renewable energy technologies to help them lower their energy costs and carbon footprint. School budgets are typically limited, and with a wide variety of technologies and applications available, it can be difficult for schools to know which renewable energy solutions (e.g., solar and battery technologies) are most effective. Through this pilot, OG&E will test program components that target schools in underserved or disadvantaged communities. Specifically, this demonstration pilot will seek to try several combinations of technologies, rates, funding sources, and applications. It will also assess how solar and energy storage technologies can reduce peak demand, provide clean energy, reduce energy waste, realize societal benefits, and lower operating costs. OG&E's key objective for this pilot is to demonstrate the capability of renewable energy technology to deliver overall value to the school/education segment.

2023 activities and results include:

The first of two solar arrays were installed and energized in November 2023. Earlsboro Elementary school now has an operational 22.5 solar array providing a 23% annual energy offset.

Closing out the end of the year, the second solar array was installed at Irving Middle School. This is a 19.26kW system installed as part of a pergola structure allowing an outdoor classroom and garden to take place underneath. This array is estimated to produce over 23,000 kWh annually.

5.0 Implementers

Below is a table that identifies all implementers involved in the Demand Programs.

Company	Name	Business Address	Business Email Address	Business Phone Number
Skyline Energy Solutions	Jamie O'Bryant	PO Box 718, Pauls Valley, OK	skylineenergy@yahoo.com	(405) 238-7800
Frontier Associates LLC	Jean Krausse	1515 S. Capital of Texas Hwy Suite 110, Austin, TX	admin@frontierassoc.com	(512) 372-8778
CLEAResult	Andrenika Whisenton	117 NW 8th St., Oklahoma City, OK 73102	Andrenika.whisenton@clearesult.com	(708) 864-4978
AM Conservation	Lee Moran	6650 Echo Ave Suite A Reno, NV 89506	lmoran@AMConservation.com	(775) 685-6134

6.0 High Volume Electricity User Opt-Out

High Volume Electricity User Opt-Out - Energy Efficiency - All Customers

Metric	Total Electric Sales	Eligible to Opt-Out	% of Eligible Opt-Out	Opted Out	% of Opted Out
Electric Sales (GWh)	27,219	11,500	42%	8,676	32%
Number of Customers		12,040		2,912	

High Volume Electricity User Opt-Out - Energy Efficiency - Municipal & State

Metric	2023		
	Opt-Out Eligible	Chose to Opt-Out of EE Programs	% Opt-Out
2022 Electric Sales (GWh)	2,855	441	15%
Number of Accounts	15,865	774	5%

7.0 Attachments

7.1 AEG Evaluation Measurement and Verification with Cost-Effectiveness Report

AEG

Oklahoma Gas & Electric (OG&E)

Oklahoma Comprehensive Demand Program Portfolio Evaluation for 2023

Prepared for: OG&E
By: Applied Energy Group, Inc.
Date: June 11, 2024
AEG Key Contact: Barb Ryan

EXECUTIVE SUMMARY

This document summarizes the portfolio evaluation of Oklahoma Gas and Electric's (OG&E) Oklahoma Comprehensive Demand Program Portfolio in 2023, fulfilling the requirements outlined in Title 165: Oklahoma Corporation Commission, Chapter 35. Electric Utility Rules Subchapter 41, Demand Programs 165:35-41-7.

In 2023, OG&E successfully operated the Comprehensive Demand Program Portfolio, spending 98% of budgeted expenditures and achieving:

- 107% of net energy savings goals,
- 85% of net demand reduction goals, and
- 2.19 cost-effectiveness under the Total Resource Cost (TRC) Test.

Table ES-1 provides a summary of the portfolio evaluation findings.

Table ES-1 OG&E Portfolio Evaluation Summary

Savings	Gross Savings			Net Savings				
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG	Lifetime
Energy (kWh)	204,749,541	202,345,632	99%	168,002,055	179,122,489	107%	89%	1,811,663,647
Demand (kW)	33,922	33,597	99%	34,746	29,388	85%	87%	n/a

The portfolio includes three programs comprised of 14 delivery channels. Table ES-2 below lists the programs, program channels, and corresponding implementers.

Table ES-2 OG&E Oklahoma Programs and Channels

Program	Channel	Implementer
Home Energy Efficiency Program (HEEP)	Residential Solutions (RSOL)	CLEAResult
	Residential HVAC Replacement & Tune-up (Res HVAC)	
	Consumer Products (CPS)	
	Positive Energy – New Home Construction (PE-NHC)	
	LivingWise® Schools Outreach (LivingWise)	AM Conservation
Weatherization Residential Assistance Program (WRAP)		Skyline Energy Solutions (Skyline)
Commercial Energy Efficiency Program (CEEP)	Commercial and Industrial Solutions (CIS)	CLEAResult
	Schools and Government Efficiency (SAGE)	
	Small Business Direct Install (SBDI)	
	Small Business Midstream (Midstream)	
	C&I HVAC Replacement & Tune-up (C&I HVAC)	
	Continuous Energy Improvement (CEI)	
	Retro-commissioning (RCx)	
	Networked Lighting Controls (NLC)	

Table ES-3 provides corresponding summaries of the evaluated energy savings. Notably, CEEP is the highest contributor to energy savings.

Table ES-3 OG&E Portfolio Evaluation Impacts – Energy Savings

Program	Gross Energy Savings (kWh)			Net Energy Savings (kWh)				
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG	Lifetime
HEEP	58,418,689	56,922,058	97%	38,639,456	38,440,636	99%	68%	481,916,700
WRAP	13,046,111	13,023,462	100%	10,918,216	13,023,462	119%	100%	203,492,236
CEEP	133,284,741	132,400,113	99%	118,444,383	127,658,392	108%	96%	1,126,254,711
Total	**204,749,541**	**202,345,632**	**99%**	**168,002,055**	**179,122,489**	**107%**	**89%**	**1,811,663,647**

Figure ES-1 shows the program distribution of energy savings.

Figure ES-1 OG&E Portfolio Energy Savings Summary

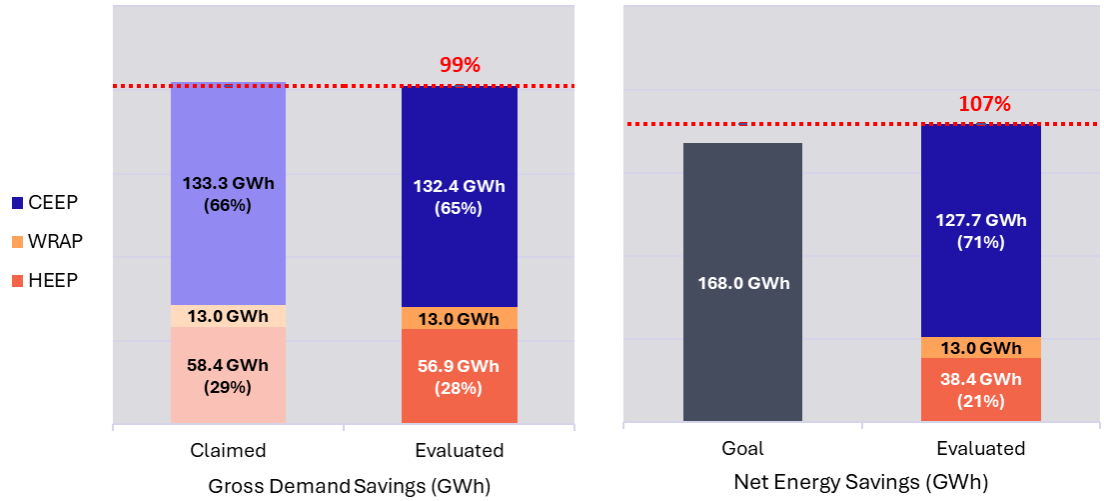


Table ES-4 provides corresponding summaries of the evaluated demand reductions. Again, CEEP is the highest contributor to demand reductions. Although realization rates for each program are high, the portfolio did not meet its demand goals.

Table ES-4 OG&E Portfolio Evaluation Impacts – Annual Demand Reduction

Program	Gross Demand Reduction (kW)			Net Demand Reduction (kW)			
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG
HEEP	10,512	9,888	94%	6,621	6,985	105%	71%
WRAP	3,288	3,284	100%	3,807	3,284	86%	100%
CEEP	20,122	20,425	102%	24,318	19,118	79%	94%
Total	**33,922**	**33,597**	**99%**	**34,746**	**29,388**	**85%**	**87%**

Figure ES-2 shows the program distribution of demand reductions.

Figure ES-2 OG&E Portfolio Demand Reduction Summary

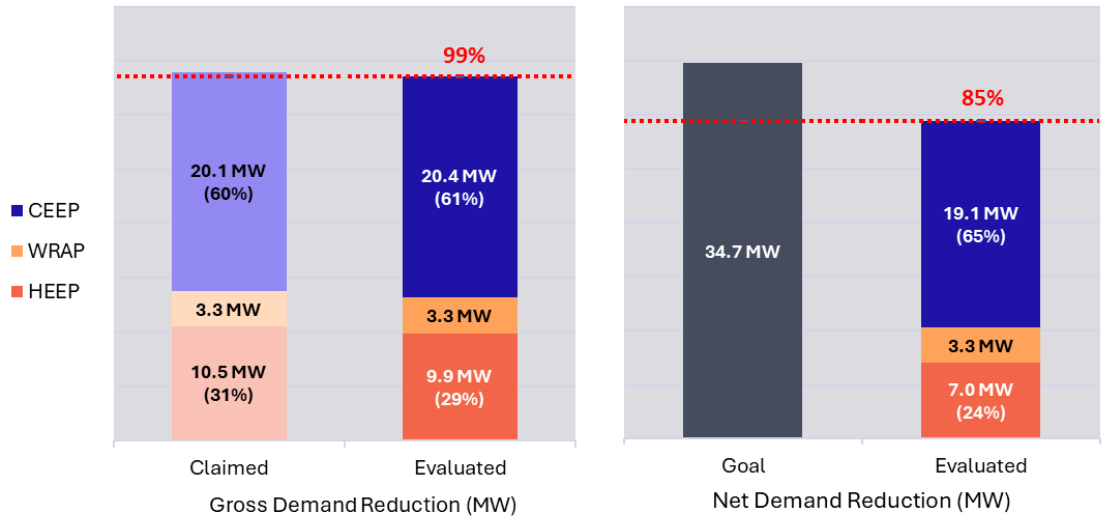


Table ES-5 shows the summary of budgeted and actual expenditures. OG&E spent $38,762,900 in PY2023, equivalent to 98% of the planned budget.

Table ES-5 Summary of Budgets and Actual Spend

Program	Budgeted Spend	Actual Spend	% Attained
HEEP	$12,459,611	$11,528,635	93%
WRAP	$6,211,566	$6,249,419	101%
CEEP	$17,769,987	$18,207,050	102%
Energy Education	$880,000	$832,653	95%
R&D	$1,976,122	$1,868,317	95%
Planning	$100,00	$76,826	77%
Total	**$39,397,286**	**$38,762,900**	**98%**

Table ES-6 shows the results of the cost-effectiveness analysis. Four out of five CE tests show HEEP, WRAP, CEEP, and the overall portfolio as cost-effective, achieving an overall TRC of 2.19 with $62,133,862 in TRC net benefits. Note that the RIM test is below 1.0, which is expected and typical.[1] The cost-effectiveness approach and assumptions are detailed in Appendix C.

[1] Retail rates, the costs that customers pay to consume energy and which inform utility revenues, typically exceed the avoided costs of capacity and of the generation, transmission, and distribution of energy. When an energy efficiency program achieves energy savings, the cost of lost revenues may exceed the benefits of avoided energy costs, resulting in a RIM test score lower than 1.0. This is typical of EE programming. A rare example of an EE program achieving a RIM test score greater than 1.0 would be a demand response program for which the avoided costs of capacity (and energy) exceed the administration and implementation costs of the program (and its lost revenues).

Table ES-6 Cost-Effectiveness Estimates and TRC Net Benefits Summary

Program	TRC	PACT	RIM	PCT	SCT	TRC Net Benefits
HEEP	2.44	2.77	0.47	7.67	5.19	$19,208,515
WRAP	2.84	2.52	0.52	5.85	4.43	$11,153,458
CEEP	2.14	3.95	0.44	6.18	3.74	$34,549,686
Energy Education	-	-	-	-	-	-$832,653
R&D	-	-	-	-	-	-$1,868,317
Planning	-	-	-	-	-	-$76,826
Overall	**2.19**	**3.09**	**0.45**	**6.48**	**3.87**	**$62,133,862**

Key Evaluation Findings and Recommendations

The impact and process evaluation of the PY2023 Oklahoma Comprehensive Demand Program Portfolio resulted in the following key recommendations. Further detail is provided in program-specific sections.

PY2023 Portfolio Changes and Enhancements

During PY2023 OG&E incorporated the following changes and enhancements to the portfolio:

- In response to AEG's PY2022 findings, OG&E incorporated an internal **Trade Ally to conduct tune-ups in rural areas,** which has increased participation in hard-to-reach areas and elicited a very positive customer response.
- **LivingWise, kits were changed** from being in cardboard boxes to **a drawstring bag** that the kids can wear like a backpack. This elicited a positive response from both teachers and kids. In addition, bags are reusable so there is less waste as well.
- OG&E continued to **expand the RTQ initiative within the WRAP program**. In PY2023, the RTQ Initiative added 200 homes to the program and 707,653 kWh and 241 kW in additional evaluated energy and demand savings.
- OG&E shifted **air and duct sealing measures from RSOL to Res HVAC** to achieve a better alignment of measures and channels. CR also applied AEG's recommended savings estimation approach starting in Q2 which prevented an overstatement of the savings from these measures.

HEEP Findings and Recommendations

HEEP performed well in PY2023, generating high realization rates and achieving 99% and 105% of its energy and demand net savings goals, respectively. CPS was a primary driver of HEEP savings, representing 68% of energy savings and 53% of demand savings. However, these savings will diminish in PY2024 with the enforcement of the EISA backstop (45 lumens per watt). Replacing lighting savings will be challenging, but opportunities exist.

Recommendations:

- RSOL: Add more weatherization measures.
- LivingWise: Add LED nightlights and Tier 2 smart strips. Deliver FutureWise to high school students (as proposed by the OG&E program manager).
- CPS: Implement an online marketplace and expand measure offerings (e.g., occupancy-sensing wall switches, water heater pipe wrap, weatherization measures such as air sealing and outlet and switch gaskets, and electric vehicle charging accessories). OG&E is currently exploring this option.
- PE-NHC: Offer additional incentives for zero-energy or zero-energy-ready homes, and encourage builders to meet all, not just some, of the channel's efficiency requirements.

Improved data collection may increase claimed energy savings. It will also facilitate savings verification efforts.

Recommendations:

- Ask contractors to document the numbers of faucets, showerheads, and occupants to improve per-unit savings of water-saving measures. These data can be collected by contractors during installation (RSOL) or in the HEW survey (LivingWise).

Inconsistencies in energy savings calculations can undercut claimed savings.

Recommendations:

- Review claimed savings calculations to ensure accuracy of assumptions and consistency with Arkansas Technical Resource Manual (AR TRM) V9.1 and other relevant resources.

The AR TRM's savings algorithm for faucet aerators is not sensible in its calculations or its assumptions. Whereas other TRMs take a bottom-up approach to estimating savings, the AR TRM takes a top-down approach that is difficult to reconcile; it makes flawed assumptions about water consumption patterns and about household occupancy. Using another TRM such as the Pennsylvania Act 129 (PA) TRM would increase measure savings overall and estimate savings for kitchen and bathroom aerators more accurately individually.

Recommendations:

- Adopt the PA TRM's approach to faucet aerators.

The AR TRM uses an outdated federal standard to inform its baseline for water dispensers. The AR TRM's baseline on-mode daily consumption of 2.19 kWh is 83% higher than the baseline assumption that ENERGY STAR uses (informed by current standards), thus artificially inflating energy savings.

Recommendations:

- Use ENERGY STAR's assumption for on-mode daily consumption of 1.20 kWh per day as the baseline for water dispensers.

Through CPS, smart thermostats do not achieve demand reductions. The AR TRM, consistent with other jurisdictions, notes that demand reductions should be attributed to a designated demand response (DR) delivery mechanism.

Recommendations:

- Work to integrate SmartHours offerings with the portfolio to maximize value to customers and the utility. This recommendation applies to all measures with "smart" elements and should cut across all relevant channels and programs, particularly WRAP.

Res HVAC and PE-NHC may have a free rider issue. AEG's Res HVAC NTG result in PY2022 was 79% compared to 96% in PY2021, and the PE-NHC NTG result in PY2022 was 76% compared to 88% in PY2021.

Recommendations:

- Res HVAC: Conduct additional research with past participants who are not currently eligible for a tune-up through the program to determine if they are continuing to tune up their AC units on their own.
- PE-NHC: Conduct additional research that will look at how program participation affects the price of homes, the measures installed, and the number of homes built.

RSOL and Res HVAC could benefit from automation improvements. Some RSOL participants expressed frustration with the rebate process, and Trade Allies participating in the Res HVAC program said scheduling customers can be difficult.

Recommendations:

- RSOL: Include automated email responses to let participants know that their rebate application has been received and consider adding a tracking number so customers can see where their rebate is in the queue and when they can expect to receive the rebate.

- Res HVAC: Consider instituting a central scheduling system for contractors.

A variety of marketing strategies could improve program participation for several channels. Additional marketing would increase program awareness and encourage customers to explore deeper savings opportunities.

Recommendations:

- Res HVAC: Canvass neighborhoods to make it easier for contractors to schedule appointments with participants.
- LivingWise: Provide additional rewards to students who fill out their HEWs and complete activities at home with their families.
- CPS: Increase the number of field representatives.
- PE-NHC: Showcase high-frequency builders on OG&E's website.

WRAP Findings and Recommendations

The Repair-to-Qualify (RTQ) pilot has been very successful in weatherizing homes that otherwise would not have qualified for WRAP.

Recommendations:

- Add a RTQ component to WRAP to improve program reach and increase participation and energy savings.

Claimed savings estimates rely on unknown assumptions. Claimed savings tend to differ significantly from AEG's savings replication efforts, which rely on the more recent AR TRM V9.1.

Recommendations:

- Update claimed savings estimates based on AR TRM V9.1 algorithms and assumptions.

Incorporating other measures into the program will help offset losses of lighting savings caused by the enforcement of the EISA backstop.

Recommendations:

- Introduce "low-hanging fruit" measures like specialty LEDs, low-flow faucet aerators and showerheads, and Tier 1 and/or Tier 2 smart power strips.
- Calculate (or identify a regional TRM that deems) energy savings for water heater jackets installed in conditioned spaces to improve energy savings for the measure.

CEEP Findings and Recommendations

All CEEP channels are performing at a high level. Realization rates are high, and the program surpassed its energy savings goals. However, in some instances, more transparency is needed in how savings are calculated.

Recommendations:

- Provide all algorithms and inputs used for calculating savings, especially for stand-alone dehumidifiers, VFDs, and DI weatherstripping.

There is opportunity for improvement and clarity in program processes. CIS Trade Allies would like to better understand how savings are calculated. For SAGE, both CLEAResult and Trade Allies could benefit by better understanding how the channel's online portal is used, how it was designed, and how it could be improved.

- Meet with SAGE Trade Allies to better understand how they use the portal and where their pain points are.

Lighting continues to make up the majority of CEEP savings. While there is considerable opportunity for commercial lighting, more comprehensive projects will help maintain current savings levels.

Recommendations:

- Explore opportunities for additional measures for schools (such as lighting controls, weatherstripping and custom measures) and Midstream.

Indoor agriculture continues to grow. This segment is responsible for much of the CIS channel's increased energy savings.

Recommendations:

- Consider designing and delivering a channel designated to horticultural lighting channel that would allow implementation staff to devote time to training in this area and to be proactive in working with this segment of customers.

Several channels could benefit from expanded marketing and outreach. Opportunities may exist for SBDI in specific segments, such as grocery stores. There is currently only one participating restaurant distributor in Midstream, and they represent less than 1% of the savings, and C&I HVAC should continue to try and expand into rural, underserved areas.

Recommendations:

- SBDI: Creating segment specific marketing collateral.
- Midstream: Recruit additional restaurant supply distributors.
- C&I HVAC: Recruit Trade Allies that are willing to service rural customers.

Overview of Methods

The **impact evaluation** has three objectives: (1) estimate evaluated gross savings, (2) estimate evaluated net savings, and (3) test program cost-effectiveness. We used a combination of evaluation activities to produce a customized approach appropriate to each program and channel. Figure ES-3 shows the evaluation activities performed in the PY2023 evaluation and maps each activity to the corresponding objective.

Figure ES-3 Impact Evaluation Activities

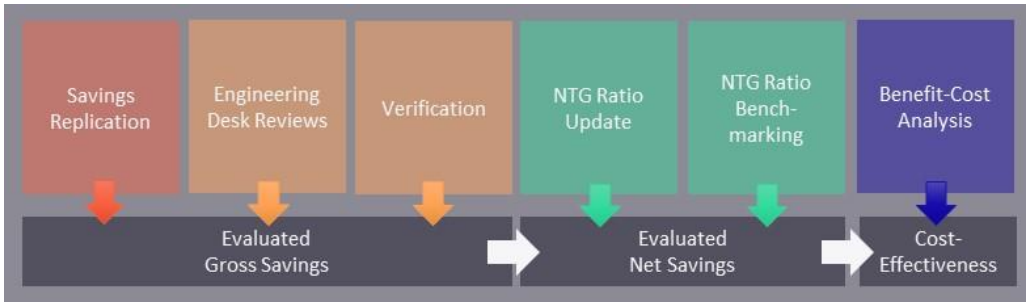


Table ES-7 summarizes the impact evaluation activities performed for each program and channel. We include detailed descriptions of each activity in Appendix A.

Table ES-7 Impact Evaluation Activities by Program and Channel

Channel	Savings Replication	Desk Review	Savings Verification	NTG Ratio Update	Benefit-Cost Analysis
HEEP					
RSOL	✓	✓	✓	✓	✓
LivingWise		✓	✓		✓
Res HVAC	✓	✓	✓		✓
CPS	✓	✓	✓		✓
PE-NHC		✓			✓
WRAP					
WRAP	✓	✓	✓		✓
CEEP					
CIS		✓	✓+	✓	✓
SAGE		✓	✓+	✓	✓
SBDI		✓	✓+		✓
Midstream	✓	✓	✓	✓	✓
CEI		✓			✓
C&I HVAC	✓	✓	✓+	✓	✓

+ site visits were performed for additional verification

AEG's approach to **process evaluations** is to provide quantifiable, actionable results that can be replicated over time to measure progress toward the program's goals. AEG's analysis collectively contributes to developing actionable recommendations that capitalize on program strengths, overcome program weaknesses, streamline program data collection and tracking, and increase program key performance indicators (KPIs). Similar to the impact evaluation, we used a combination of activities to produce a customized approach appropriate to each program and channel. Figure ES-4 lists the typical evaluation activities performed in a process evaluation.

Figure ES-4 Process Evaluation Activities

Table ES-8 summarizes the process evaluation activities performed for each program and channel. We include detailed descriptions of each activity in Appendix A.

Table ES-8 Process Evaluation Activities by Program and Channel

Program	Program Manager Interview	Implementer Interview	Trade Ally Survey/ Interview	Participant Survey/ Interview[2]	Cycle Time Analysis
HEEP					
RSOL	✓	✓		✓	✓
LivingWise	✓	✓			
Res HVAC	✓	✓	✓		
CPS	✓	✓			
PE-NHC	✓	✓		✓	
WRAP					
WRAP	✓	✓	✓		
CEEP					
CIS	✓	✓	✓	✓	✓
SAGE	✓	✓	✓	✓	✓
SBDI	✓	✓	✓		✓
Midstream	✓	✓	✓	✓	
CEI	✓	✓			
C&I HVAC	✓	✓	✓	✓	✓

As applicable, we developed a **sampling plan** to efficiently execute each analysis while maintaining a +/- 10% error margin at a 90% confidence level at the program level. For activities that require customer interaction, such as surveys, interviews, and onsite, we reviewed the selected sample with OG&E staff to ensure that participants are not currently included in other OG&E surveys (i.e., avoid survey fatigue). We include detailed descriptions of the sample design in Appendix B.

[2] Under a separate engagement in 2022, AEG conducted a market evaluation that included surveys with nonparticipants. For that reason, we did not conduct additional nonparticipant surveys. AEG will work with OG&E to identify if nonparticipant surveys are necessary for the PY2024 evaluation.

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1 | INTRODUCTION

This report documents the portfolio evaluation of Oklahoma Gas and Electric's (OG&E) Oklahoma Comprehensive Demand Program Portfolio in PY2023. OG&E is submitting this report to fulfill the requirements outlined in Title 165: Oklahoma Corporation Commission, Chapter 35. Electric Utility Rules Subchapter 41, Demand Programs 165:35-41-7.

Evaluation Objectives

The evaluation has the following key objectives:

- Perform an impact evaluation that estimates evaluated gross and net savings for energy (kWh) and peak demand (kW) and tests cost-effectiveness (CE) at each program level.
- Perform a process evaluation that results in quantifiable, actionable results OG&E can replicate over time to measure progress toward the program's goals.

Program Overview

OG&E portfolio includes three programs comprised of 14 delivery channels. Table 1-1 lists the programs, program channels, and corresponding implementers.

Table 1-1 OG&E Oklahoma Programs and Channels

Program	Channel	Implementer
Home Energy Efficiency Program (HEEP)	Residential Solutions (RSOL)	CLEAResult
	Residential HVAC Replacement & Tune-up (Res HVAC)	
	Consumer Products (CPS)	
	Positive Energy – New Home Construction (PE-NHC)	
	LivingWise® Schools Outreach (LivingWise)	AM Conservation
Weatherization Residential Assistance Program (WRAP)		Skyline Energy Solutions (Skyline)
Commercial Energy Efficiency Program (CEEP)	Commercial and Industrial Solutions (CIS)	CLEAResult
	Schools and Government Efficiency (SAGE)	
	Small Business Direct Install (SBDI)	
	Small Business Midstream (Midstream)	
	C&I HVAC Replacement & Tune-up (C&I HVAC)	
	Continuous Energy Improvement (CEI)	
	Retro-commissioning (RCx)	
	Networked Lighting Controls (NLC)	

We provide detailed descriptions of each channel within the program-specific sections of this report.

Report Structure

The remainder of this report is structured as follows:

Section 2 – Portfolio-level evaluation results, key findings, and recommendations

Section 3 – HEEP evaluation results, key findings, and recommendations

Section 4 – WRAP evaluation results, key findings, and recommendations

Section 5 – CEEP evaluation results, key findings, and recommendations

We also provide supplemental information in the appendices:

Appendix A – Detailed Methodologies

Appendix B – Sample Design and Extrapolation

Appendix C – Portfolio Cost-Effectiveness

Appendix D – Net-to-Gross Analysis

Acronyms

Table 1-2 below provides a summary of acronyms used throughout this report.

Table 1-2 Report Acronyms

Acronym	Definition
AEG	Applied Energy Group
AHRI	Air Conditioning, Heating, and Refrigeration Institute
AR	Arkansas
ASHP	Air source heat pump
C&I	Commercial & Industrial
C&I HVAC	Commercial & Industrial HVAC Replacement & Tune-up
CAC	Central air conditioner
CE	Cost-effectiveness
CEI	Continuous Energy Improvement
CFM	Cubic feet per minute
CIS	Commercial and Industrial Solutions
CPS	Consumer Products
DI	Direct install
DLC	DesignLights Consortium
DOE	Department of Energy
DSM	Demand-Side Management
EBTU	Express Building Tune-Up
EE	Energy efficiency
EER	Energy Efficiency Ratio
EISA	Energy Independence and Security Act of 2007
ES	ENERGY STAR
EUL	Estimated useful life
EV	Electric vehicle
GPM	Gallons per minute
GWh	Gigawatt-hour

Acronym	Definition
HEEP	Home Energy Efficiency Program
HERS	Home Energy Rating System
HEW	Home Energy Worksheet
HP	Heat pump
HSPF	Heating Seasonal Performance Ratio
HVAC	Heating, ventilation, and air conditioning
IL	Illinois
ISR	In-service rate
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light-emitting diode
LivingWise	LivingWise Schools Outreach
MF	Multifamily
Midstream	Small Business Midstream
MN	Minnesota
MW	Megawatt
NLC	Networked Lighting Controls
NTG	Net-to-Gross
OG&E	Oklahoma Gas & Electric
OK	Oklahoma
PA	Pennsylvania
PACT (UCT)	Program Administrator Cost Test (Utility Cost Test)
PCT	Participant Cost Test
PE-NHC	Positive Energy - New Home Construction
QA	Quality assurance
R&D	Research and development
RCx	Retro-commissioning
Res HVAC	Residential HVAC Replacement & Tune-up
RIM	Ratepayer Impact Measure Test
ROB	Replace-on-Burnout
RR	Realization rate
RSOL	Residential Solutions
RTQ	Repair-to-Qualify
SAGE	Schools and Government Efficiency
SBDI	Small Business Direct Install
SCT	Societal Cost Test
SEER	Season Energy Efficiency Ratio
SF	Single family
Skyline	Skyline Energy Solutions
TRC	Total Resource Cost Test
TRM	Technical Resource Manual
UMP	Uniform Methods Project

Acronym	Definition
WH	Water heater
WI	Wisconsin
WRAP	Weatherization Residential Assistance Program

Glossary of Terms

We provide a glossary of terms used throughout this report. We use the primary terms used by the US DOE NREL Uniform Methods Project and provide other industry-accepted terminology as a reference.

Projected savings. Values reported by a program implementer or administrator before the efficiency activities are complete.

Gross savings. Changes in energy consumption that result directly from program-related actions taken by participants in an energy efficiency (EE) program, regardless of why they participated.

Claimed (gross) savings. Values reported by a program implementer or administrator after the activities are complete, i.e., ex-ante savings, reported savings, ex-ante gross savings, reported gross savings.

Evaluated (gross) savings. Values reported by an independent, third-party evaluator after the efficiency activities and impact evaluation are complete (i.e., ex-post evaluation estimated savings, ex-post savings, ex-post gross savings, verified gross savings).

Realization Rate. The ratio of evaluated gross savings to claimed gross savings.

Net-to-gross (NTG) analysis. Estimation of the NTG ratio, which is the net savings as a fraction of gross savings.

Net savings. Change in energy use attributable to a particular EE program. These changes may implicitly or explicitly include the effects of factors such as free ridership, participant and nonparticipant spillover, and induced market effects (i.e., evaluated net savings, verified net savings).

Free ridership. The program savings attributable to free riders (program participants who would have implemented a program measure or practice in the absence of the program).

Spillover. Additional savings that are due to program influences beyond those directly associated with the program and not claimed or credited to the program. Spillover occurs when customers (participants or nonparticipants) adopt EE measures or take other efficiency actions independently or outside the program.

Deemed Savings. An estimate of energy savings or energy demand savings outcome (gross savings) for a single unit of an installed EE measure. This estimate has been developed from data sources and analytical methods widely accepted for the measure and applies to the situation being evaluated (i.e., Stipulated Values).

2 | OKLAHOMA COMPREHENSIVE DEMAND PROGRAM PORTFOLIO

This section summarizes the portfolio-level evaluation findings for the Oklahoma Comprehensive Demand Program Portfolio 2023 program year (PY2023). We also include recommendations based on our findings and a summary of our net-to-gross (NTG) analysis.

Key Evaluation Findings

The impact evaluation established total portfolio evaluated gross energy savings of 202,265,104 kWh and demand reductions of 33,664 kW, which amount to realization rates of 99%. The portfolio achieved 107% and 85% of its net energy savings and demand reduction goals. Table 2-1 provides a summary of the portfolio evaluation findings.

Table 2-1 OG&E Portfolio Evaluation Summary

Savings	Gross Savings			Net Savings				
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG	Lifetime
Energy (kWh)	204,749,541	202,345,632	99%	168,002,055	179,122,489	107%	89%	1,811,663,647
Demand (kW)	33,922	33,597	99%	34,746	29,388	85%	87%	n/a

Table 2-2 and Table 2-3 provide the corresponding summaries of the evaluated energy savings and demand reductions.

Table 2-2 OG&E Portfolio Evaluation Impacts – Energy Savings

Program	Gross Energy Savings (kWh)			Net Energy Savings (kWh)				
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG	Net Lifetime
HEEP	58,418,689	56,922,058	97%	38,639,456	38,440,636	99%	68%	481,916,700
WRAP	13,046,111	13,023,462	100%	10,918,216	13,023,462	119%	100%	203,492,236
CEEP	133,284,741	132,400,113	99%	118,444,383	127,658,392	108%	96%	1,126,254,711
Total	**204,749,541**	**202,345,632**	**99%**	**168,002,055**	**179,122,489**	**107%**	**89%**	**1,811,663,647**

Table 2-3 OG&E Portfolio Evaluation Impacts – Annual Demand Reduction

Program	Gross Demand Reduction (kW)			Net Demand Reduction (kW)			
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG
HEEP	10,512	9,888	94%	6,621	6,985	105%	71%
WRAP	3,288	3,284	100%	3,807	3,284	86%	100%
CEEP	20,122	20,425	102%	24,318	19,118	79%	94%
Total	**33,922**	**33,597**	**99%**	**34,746**	**29,388**	**85%**	**87%**

Figure 2-1 and Figure 2-2 show the program distribution of energy savings and demand reductions, respectively. Notably, CEEP is the highest contributor to energy savings and demand reductions. Although the program realization rates are high, the portfolio is not achieving its demand goals.

Figure 2-1 OG&E Portfolio Energy Savings Summary

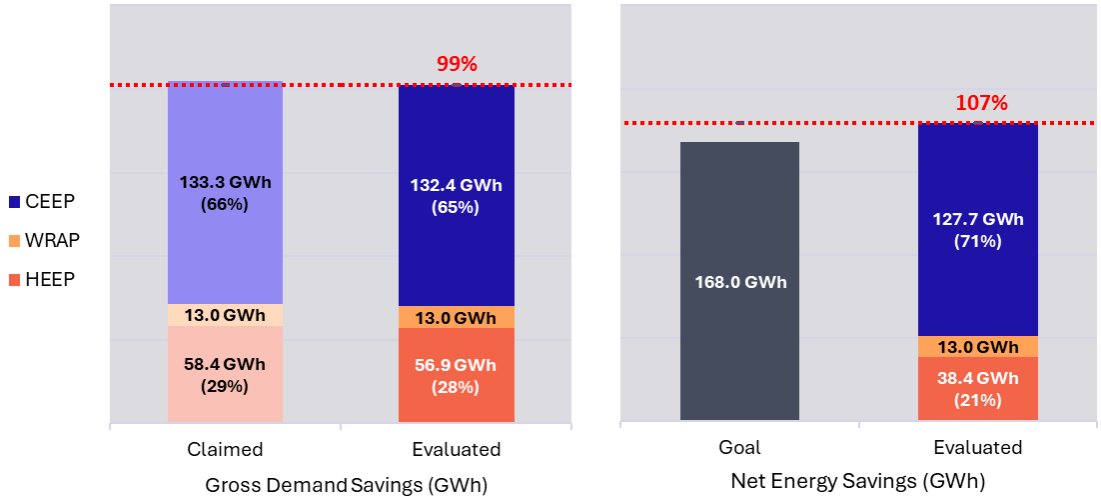


Figure 2-2 OG&E Portfolio Demand Reduction Summary

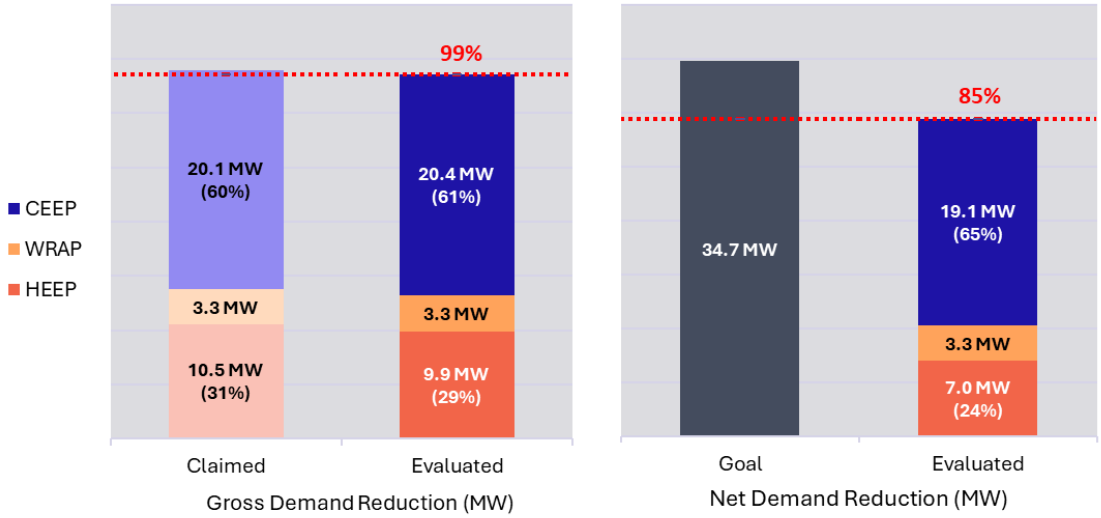


Table 2-4 shows the summary of budgeted and actual expenditures. OG&E spent $38,762,900 in PY2023, equivalent to 98% of the planned budget.

Table 2-4 Summary of Budgets and Actual Spend

Program	Budgeted Spend	Actual Spend	% Attained
HEEP	$12,459,611	$11,528,635	93%
WRAP	$6,211,566	$6,249,419	101%
CEEP	$17,769,987	$18,207,050	102%
Energy Education	$880,000	$832,653	95%
R&D	$1,976,122	$1,868,317	95%
Planning	$100,000	$76,826	77%
Total	**$39,397,286**	**$38,762,900**	**98%**

Table 2-5 shows the results of the cost-effectiveness analysis. Four out of five CE tests show HEEP, WRAP, CEEP, and the overall portfolio as cost-effective, achieving an overall TRC of 2.19 with $62,133,862 in TRC

net benefits. Note that the RIM test is below 1.0, which is expected and typical.[3] The cost-effectiveness approach and assumptions are detailed in Appendix C.

Table 2-5 Cost-Effectiveness Estimates and TRC Net Benefits Summary

Program	TRC	PACT	RIM	PCT	SCT	TRC Net Benefits
HEEP	2.44	2.77	0.47	7.67	5.19	$19,208,515
WRAP	2.84	2.52	0.52	5.85	4.43	$11,153,458
CEEP	2.14	3.95	0.44	6.18	3.74	$34,549,686
Energy Education	-	-	-	-	-	-$832,653
R&D	-	-	-	-	-	-$1,868,317
Planning	-	-	-	-	-	-$76,826
Overall	**2.19**	**3.09**	**0.45**	**6.48**	**3.87**	**$62,133,862**

PY2023 Portfolio Changes and Enhancements

During PY2023 OG&E incorporated the following changes and enhancements to the portfolio:

- In response to AEG's PY2022 findings, OG&E incorporated an internal **Trade Ally to conduct tune-ups in rural areas,** which has increased participation in hard-to-reach areas and elicited a very positive customer response.
- **LivingWise, kits were changed** from being in cardboard boxes to **a drawstring bag** that the kids can wear like a backpack. This elicited a positive response from both teachers and kids. In addition, bags are reusable so there is less waste as well.
- OG&E continued to **expand the RTQ initiative within the WRAP program**. In PY2023, the RTQ Initiative added 200 homes to the program and 707,653 kWh and 241 kW in additional evaluated energy and demand savings.
- OG&E shifted **air and duct sealing measures from RSOL to Res HVAC** to achieve a better alignment of measures and channels. CR also applied AEG's recommended savings estimation approach starting in Q2 which prevented an overstatement of the savings from these measures.

Net-to-Gross Analysis

AEG's approach to NTG analysis includes updating the NTG ratio for each channel once per cycle on a prospective basis. We determined the schedule for NTG updates during our initial evaluation planning sessions with the OG&E and implementation teams early in PY2023. Consequently, we used the updated PY2022 NTG ratios for Res HVAC, C&I HVAC, and PE-NHC channels and the PY2021 NTG adjustments for the remaining programs and channels. AEG made considerable efforts to remain consistent with previous survey-based approaches to establish appropriate comparisons to prior NTG ratios. We discuss program/channel-specific surveys in respective program/channel sections.

The PY2023 NTG analysis consisted of the following **updates**:

- We relaunched surveys for C&I HVAC to try and collect more responses. We used a survey-based approach for four channels: RSOL, CIS, SAGE, and Midstream. AEG made considerable efforts to

[3] Retail rates, the costs that customers pay to consume energy, and which inform utility revenues, typically exceed the avoided costs of capacity and of the generation, transmission, and distribution of energy. When an energy efficiency program achieves energy savings, the cost of lost revenues may exceed the benefits of avoided energy costs, resulting in a RIM test score lower than 1.0. This is typical of EE programming. A rare example of an EE program achieving a RIM test score greater than 1.0 would be a demand response program for which the avoided costs of capacity (and energy) exceed the administration and implementation costs of the program (and its lost revenues).

remain consistent with previous survey-based approaches to establish appropriate comparisons to prior NTG ratios.

The overall NTG analysis has yielded the following key findings:

- The survey-based approach for RSOL, CIS, SAGE, and Midstream produced higher or comparable NTG adjustment ratios relative to PY2021. As mentioned above, we used methods consistent with PY2021 methods, and channel operations or delivery methods did not substantially change in PY2022.

Table 2-6 and Table 2-7 summarize the NTG analysis findings for HEEP and CEEP, respectively. WRAP is an income-qualified program with a stipulated NTG ratio of 100%. We did not conduct a free ridership or spillover analyses for WRAP, and net savings are equal to gross savings.

Table 2-6 HEEP NTG Summary

Channel	Current Ratios applied to PY2023		PY2023 Analysis
	kWh	kW	Prospective NTG (to be applied to PY2024)
RSOL	85%	76%	94%
LivingWise	100%	100%	n/a
Res HVAC	79%	79%	n/a
CPS	61%	63%	n/a
PE-NHC	76%	76%	n/a
Overall (Weighted)	**68%**	**71%**	

Table 2-7 CEEP NTG Summary

Channel	Current Ratios applied to PY2023		PY2023 Analysis
	kWh	kW	Prospective NTG (to be applied to PY2024)
CIS	100%	97%	99%
SAGE	100%	100%	99%
SBDI	100%	100%	n/a
Midstream	88%	88%	98%
CEI	100%	100%	n/a
C&I HVAC	86%	86%	61%
Overall (Weighted)	**96%**	**94%**	

For the PY2024 evaluation, we plan to update the NTG ratio for SBDI. We also recommend that we **conduct additional NTG related research for Res HVAC, C&I HVAC, and PE-NHC.** These efforts will explore more aspects of program attribution than are traditionally covered in a NTG battery.

3 | HOME ENERGY EFFICIENCY PROGRAM (HEEP)

The Home Energy Efficiency Program (HEEP) is a multipronged program that encourages Oklahoma residential customers to reduce energy consumption by implementing energy-efficient upgrades in their homes. Multiple channel offerings target homeowners with participation options designed to improve customer engagement and measure adoption (e.g., LED lighting). The program consists of the following five delivery channels:

- Residential Solutions (RSOL)
- LivingWise® Schools Outreach (LivingWise)
- Residential HVAC Replacement and Tune-Up (Res HVAC)
- Consumer Products (CPS)
- Positive Energy – New Home Construction (PE-NHC)

We provide detailed descriptions of each channel in each corresponding subsection.

HEEP – Key Evaluation Findings and Recommendations

The impact evaluation established HEEP gross evaluated energy savings of 56,922,058 kWh and gross evaluated demand savings of 9,888 kW, which amount to realization rates of 97% and 94%, respectively. HEEP achieved 99% of its net energy savings goals and 105% of its net demand reduction goals.

Table 3-1 provides a summary of the HEEP impact evaluation findings.

Table 3-1 HEEP Impact Evaluation Summary

Savings	Gross Savings			Net Savings				
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG	Lifetime
Energy (kWh)	58,418,689	56,922,058	97%	38,639,456	38,440,636	99%	68%	481,916,700
Demand (kW)	10,512	9,888	94%	6,621	6,985	105%	71%	n/a

Table 3-2 and Table 3-3 provide the corresponding channel-level summaries of the evaluated energy and demand savings.

Table 3-2 HEEP Energy Savings Summary by Channel

Channel	Gross Energy Savings (kWh)			Net Energy Savings (kWh)		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
RSOL	3,109,882	3,067,089	99%	2,607,026	85%	38,639,998
LivingWise	1,733,614	1,788,489	103%	1,788,489	100%	18,073,453
Res HVAC	11,370,839	10,481,324	92%	8,280,246	79%	103,278,124
CPS	39,584,658	38,932,289	98%	23,748,697	61%	288,639,057
PE-NHC	2,619,696	2,652,866	101%	2,016,178	76%	33,286,068
Total HEEP	**58,418,689**	**56,922,058**	**97%**	**38,440,636**	**68%**	**481,916,700**

Table 3-3 HEEP Demand Reduction Summary by Channel

Channel	Gross Demand Reduction (kW)			Net Demand Reduction (kW)	
	Claimed	Evaluated	RR	Evaluated	NTG
RSOL	1,080	1,032	96%	784	76%
LivingWise	199	199	100%	199	100%
Res HVAC	2,753	2,705	98%	2,137	79%
CPS	5,593	5,065	91%	3,191	63%
PE-NHC	886	886	100%	674	76%
Total HEEP	**10,512**	**9,888**	**94%**	**6,985**	**71%**

Figure 3-1 and Figure 3-2 show the HEEP channel distribution of energy savings and demand reductions. Notably, CPS and Res HVAC contributed the most energy savings and demand reductions.

Figure 3-1 HEEP Energy Savings Summary

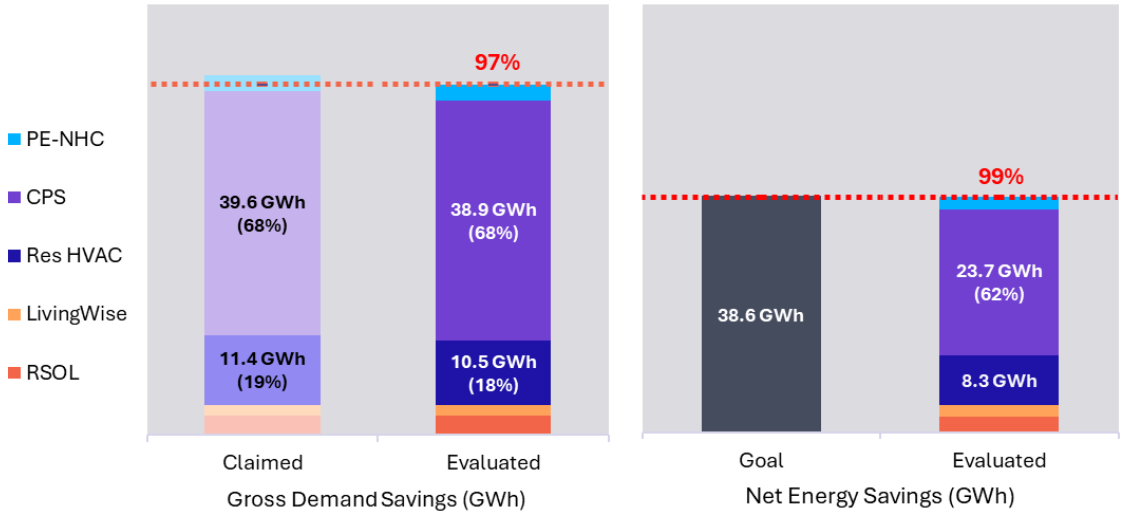
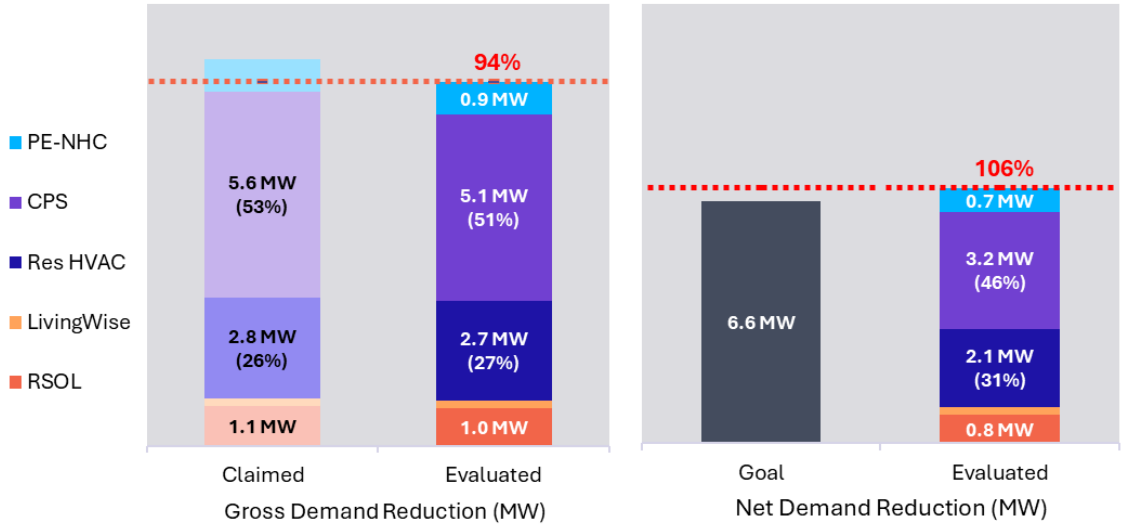


Figure 3-2 HEEP Demand Reduction Summary



The evaluation key findings and recommendations for the HEEP program are discussed below. We provide further detail for each HEEP delivery channel in the corresponding channel subsections.

HEEP performed well in PY2023, generating high realization rates and achieving 99% and 105% of its energy and demand net savings goals, respectively. CPS was a primary driver of HEEP savings representing 68% of energy savings and 53% of demand savings. But these savings will diminish in PY2024 with the enforcement of the EISA backstop (45 lumens per watt). Replacing lighting savings will be challenging, but opportunities exist.

Recommendations:

- RSOL: Add more weatherization measures.
- LivingWise: Add LED nightlights and Tier 2 smart strips. Deliver FutureWise to high school students (as proposed by the OG&E program manager).
- CPS: Implement an online marketplace, and expand measure offerings (e.g., occupancy-sensing wall switches, water heater pipe wrap, weatherization measures such as air sealing and outlet and switch gaskets, and electric vehicle charging accessories). OG&E has already begun planning for an online marketplace.
- PE-NHC: Offer additional incentives for zero-energy or zero-energy-ready homes, and encourage builders to meet all, not just some, of the channel's efficiency requirements.

Improved data collection may increase claimed energy savings. It will also facilitate savings verification efforts.

Recommendations:

- Ask contractors to document the numbers of faucets, showerheads, and occupants to improve per-unit savings of water-saving measures, as well as other details such as the baseline wattages of replaced light bulbs. These data can be collected by contractors during installation (e.g., RSOL) or in the home energy worksheet (HEW) survey (LivingWise).

Inconsistences in energy savings calculations can undercut claimed savings.

Recommendations:

- Review claimed savings calculations to ensure accuracy of assumptions and consistency with AR TRM and other relevant resources.

The AR TRM's savings algorithm for faucet aerators is not sensible in its calculations or its assumptions. Whereas other TRMs take a bottom-up approach to estimating savings, the AR TRM takes a top-down approach that is difficult to reconcile; it makes flawed assumptions about water consumption patterns and about household occupancy. Using another TRM such as the Pennsylvania Act 129 (PA) TRM would increase measure savings overall and estimate savings for kitchen and bathroom aerators more accurately individually.

Recommendations:

- Adopt the PA TRM's approach to faucet aerators for RSOL and LivingWise.

The AR TRM uses an outdated federal standard to inform its baseline for water dispensers. The AR TRM's baseline on-mode daily consumption of 2.19 kWh is 83% higher than the baseline assumption that ENERGY STAR uses (informed by current standards), thus artificially inflating energy savings.

Recommendations:

- Use ENERGY STAR's assumption for on-mode daily consumption of 1.20 kWh per day as the baseline for water dispensers.

Through CPS, smart thermostats do not achieve demand reductions. The AR TRM, consistent with other jurisdictions, notes that demand reductions should be attributed to a designated demand response (DR) delivery mechanism.

Recommendations:

- Incorporate a demand response component into HEEP to claim demand reductions for smart thermostats. Such an offering may reach more customers (including low-income WRAP customers; see below) than just CPS participants who purchased new smart thermostats.
- .

Res HVAC and PE-NHC may have a free rider issue. AEG's Res HVAC NTG result in PY2022 was 79% compared to 96% in PY2021 and the PE-NHC NTG result in PY2022 was 76% compared to 88% in PY2021.

Recommendations:

- Res HVAC: Conduct additional research with past participants who are not currently eligible for a tune-up through the program to determine if they are continuing to tune up their AC units on their own.
- PE-NHC: Conduct additional research that will look at how program participation affects the price of homes, the measures installed, and the number of homes built.

RSOL and Res HVAC could benefit from automation improvements. Some RSOL participants expressed frustration with the rebate process, and Trade Allies participating in the Res HVAC program said scheduling customers can be difficult.

Recommendations:

- RSOL: Include automated email responses to let participants know that their rebate application has been received and consider adding a tracking number so customers can see where their rebate is in the queue and when they can expect to receive the rebate.
- Res HVAC: Consider instituting a central scheduling system for contractors.

A variety of marketing strategies could improve program participation for several channels. Additional marketing would increase program awareness and encourage customers to explore deeper savings opportunities.

Recommendations:

- Res HVAC: Canvass neighborhoods to make it easier for contractors to schedule appointments with participants.

- LivingWise: Provide additional rewards to students who fill out their HEWs and complete activities at home with their families.
- CPS: Increase the number of field representatives.
- PE-NHC: Showcase high-frequency builders on OG&E's website.

HEEP – Evaluation Methods

Impact Evaluation Approach. Table 3-4 summarizes the impact evaluation activities conducted to determine evaluated savings.

- We conducted verification using a web survey (emailed to participants) for most channels. For the RSOL channel, verification was performed alongside the participant survey under the process evaluation.
- We used the updated PY2022 NTG adjustments for Res HVAC and PE-NHC and the PY2021 NTG adjustments for the remaining channels to estimate PY2023 net evaluated savings. We conducted an NTG update survey for RSOL, the results from which we will use the estimate net savings in PY2024.

We include detailed descriptions of each activity in Appendix A.

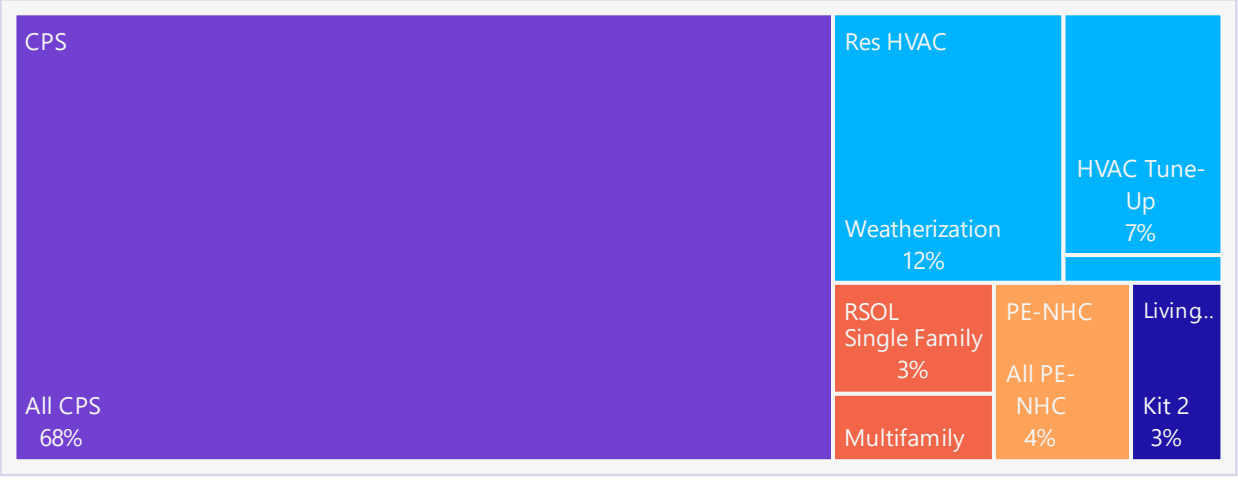
Table 3-4 HEEP Impact Evaluation Activities

Channel	Savings Replication	Desk Review	Savings Verification	NTG Ratio Update	Benefit-Cost Analysis
RSOL	✓	✓	✓	✓	✓
LivingWise	✓	✓	✓		✓
Res HVAC	✓	✓	✓		✓
CPS	✓	✓	✓		✓
PE-NHC		✓			✓

AEG used a stratified random sample for engineering desk reviews and savings verification. We stratified the HEEP participation by channel and additional criteria as appropriate. We also defined a unique sample frame unit for each channel, typically one account number or one household. We discuss the stratified sampling approach in each corresponding subsection and include detailed descriptions of the sample design in Appendix B.

Because the sample frame unit is not uniform throughout the HEEP channels, Figure 3-3 illustrates HEEP strata distribution using claimed savings.

Figure 3-3 HEEP Claimed Energy Savings Distribution by Channel and Stratum



Process Evaluation Approach.

Table 3-5 summarizes the process evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in .

Channel	Program Manager Interview	Implementer Interview	Trade Ally Survey/ Interview	Participant Survey/ Interview	Cycle Time Analysis
RSOL	✓	✓		✓	✓
LivingWise	✓	✓			
Res HVAC	✓	✓	✓	✓	
CPS	✓	✓			
PE-NHC	✓	✓			

Table 3-5 HEEP Process Evaluation Activities

Channel	Program Manager Interview	Implementer Interview	Trade Ally Survey/ Interview	Participant Survey/ Interview[4]	Cycle Time Analysis
RSOL	✓	✓		✓	✓
LivingWise	✓	✓			
Res HVAC	✓	✓	✓	✓	
CPS	✓	✓			
PE-NHC	✓	✓			

AEG designed the process evaluation to examine both internal program processes and participant response to the HEEP program. These process evaluation activities focused on understanding operations, assessing overall effectiveness, and identifying areas for improvement. We performed the following activities:

- AEG conducted **separate, comprehensive interviews with the OG&E program manager and appropriate channel implementer** to gather their impressions of the program/channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- AEG administered **participant surveys/interviews** for RSOL, Res HVAC, and PE-NHC.

Residential Solutions (RSOL)

This program channel promotes EE by having Energy Advisors provide low-cost home assessments for participating residential customers. The Energy Advisors provide direct-install (DI) measures at no cost, community and educational outreach, and information about other inducements for home retrofits that OG&E offers for measures such as ENERGY STAR windows and doors, attic insulation, and more. The inducements encourage participation by decreasing the upfront costs of assessments and energy-efficiency upgrades to the envelope and mechanical systems in customers' homes.

Participant Eligibility. RSOL is targeted at all OG&E's Oklahoma residential customers. Participants are assumed to be non-income-qualified customers, as income-qualified customers participated in WRAP.

Key Channel Elements consist of:

- **Customer engagement.** Various customer intake channels are made available through this channel, including phone, email, and web.

[4] Under a separate engagement in 2022, AEG conducted a market evaluation that included surveys with nonparticipants. For that reason, we did not conduct additional nonparticipant surveys. AEG will work with OG&E to identify if nonparticipant surveys are necessary for the PY2024 evaluation.

- **Contractors or OG&E representatives.** These individuals are available to participants and potential participants in the channel to provide information on the benefits and costs of EE upgrades. They have the knowledge to discuss the potential options customers have and assist in defining the best path for them to take based on their individual needs.
- **Inducement application.** Customers complete the channel application and submit it to the channel implementer, CLEAResult, for installed eligible measures. CLEAResult conducts a quality assurance/quality control (QA/QC) review of all applications to ensure that all required information and documentation have been provided.
- **Inducement payment.** Trade Allies receive payment checks directly from the channel for approved applications of installed eligible equipment and measures. Customers may receive payment checks on a case-by-case basis if necessary and within the established channel guidelines.

Table 3-6 RSOL PY2023 Participation by Measure

Measure	No. of Homes	
	Multi-family	Single Family
Advanced Power Strips	1,554	818
Aerator	1,229	78
Showerhead	915	66
Attic Insulation	-	482
Energy Star Doors	-	46
Energy Star Windows	-	379
Level 2 EV Charger	-	164
LED	1,214	726
Outlet Gaskets DI	584	624
Weather Stripping DI	571	395
Total Unique Homes	**2,002**	**2,152**

Table 3-6 above shows the measures implemented in PY2023. A list of eligible measures for RSOL can be found in Appendix C of OG&E 2022-2024 Demand Program Plan for Oklahoma.

RSOL – Key Evaluation Findings

The **impact evaluation** established RSOL evaluated gross energy savings of 3,067,089 kWh and evaluated gross demand savings of 1,032 kW, which amount to realization rates of 99% and 96%, respectively. Table 3-7 provides a summary of the RSOL impact evaluation findings.

Table 3-7 RSOL Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	3,109,882	3,067,089	99%	2,607,026	85%	38,639,998
Demand (kW)	1,080	1,032	96%	784	76%	n/a

The **impact evaluation** resulted in the following key findings:

- **RSOL generated significantly less energy savings in PY2023 because air and duct sealing were offered through the Res HVAC channel instead of RSOL.** In PY2022 duct sealing contributed nearly 9 GWh and comprised 73% of the channel's evaluated gross savings.
- **Most measure categories had high in-service rates (ISRs)** of 90% or above. Water-saving measures had lower ISRs at 81%, but this is fairly strong for this type of measure.

The **process evaluation** resulted in the following key findings:

- Customer awareness is the main program barrier. **Marketing adjustments were beneficial,** particularly cross promotion among residential programs. But engaging customers in rural areas with marketing has been a challenge.
- For PY2023 **OG&E added blower door tests and infrared camera imaging** to the full assessment for customers with homes built before 2016. Customers responded well to the customer education incorporated with the blower door test and have been happy with the addition.

- The program implementer **plans to continue expanding the array of weatherization measures it offers**, providing customers with more-comprehensive solutions.
- Overall **program satisfaction is high** among participants, consistent across most survey metrics.
- **Most rebates are received within 30 days**. However, a few survey respondents expressed dissatisfaction with the time it took to receive their rebates.

RSOL – Recommendations

The **impact evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * **Review claimed savings calculations for faucet aerators.** OG&E's claimed savings for faucet aerators uses the AR TRM assumption of 3.86 fixtures per home on average. This value is intended to represent the total number of household aerators: one kitchen faucet aerator and an average of 2.86 bathroom faucet aerators. However, OG&E uses 3.86 for both kitchen aerators and faucet aerators. In PY2023, using the correct deemed values would have increased claimed savings roughly twofold.
- * **Collect counts of number of faucets, showerheads, and occupants to improve per-unit savings of water-saving measures.** This is especially pertinent for multifamily customers, who tend to live in smaller homes with fewer occupants than is typically deemed by TRMs, including the AR TRM. These data can be collected by contractors during installation.
- **Use a different TRM to calculate faucet aerator energy savings.** Most other TRMs, such as the Pennsylvania Act 129 (PA) TRM, take a bottom-up approach to estimating faucet aerator savings wherein it relies on metering studies to assign separate water consumption patterns for kitchen and faucet aerators, which are then extrapolated according to assumptions about the home type (e.g., multifamily homes have fewer bathrooms than single-family homes). Conversely, the AR TRM takes a top-down approach wherein it estimates total baseline water consumption for the home, then calculates average water savings per faucet aerator. This methodology is flawed; it does not account for different consumption patterns between kitchen and bathroom aerators, nor does it properly extrapolate water savings from 1.5-gpm aerators (kitchen) to 1.0-gpm aerators (bathroom). Furthermore, the AR TRM's assumption of 3.86 faucet aerators per household implies 2.86 bathrooms and half-bathrooms per home. This is high even for single-family homes, let alone multifamily homes, which are the primary home type of RSOL participants who receive faucet aerators. Relying on the PA TRM, which has an algorithm and assumptions regarding the number of fixtures per home (with unique values for single- and multi-family homes) that are more sensible, would not only provide more-accurate savings estimates for faucet aerators but increase savings as well.

The **process evaluation recommendations** are as follows:

- **Include automated email responses** to let participants know that their rebate application has been received. Also consider adding a tracking number so customers can see where their rebate is in the queue and when they can expect to receive the rebate.
- **Simplify the rebate process.** Although satisfaction with the channel is high, some participants were frustrated with the rebate process.
- **Introduce additional weatherization measures such as windows.** The implementer would like to offer customers a more comprehensive solution.

RSOL – Impact Evaluation

Evaluation Approach. Table 3-4 (page 19) above summarizes the impact evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

- AEG conducted online participant surveys to collect ISRs (**savings verification**) and update NTG ratios (**net-to-gross**).

- AEG applied PY2021 NTG adjustment to derive PY2023 net savings. AEG will use the results from the PY2023 NTG update to derive PY2024 net evaluated savings.

AEG used a stratified random sample for engineering desk reviews and savings verification. We defined the sample frame unit as one account number or one home and stratified the RSOL participant population using the following criteria:

- **Home type (i.e., single- or multi-family).** Measure distributions, home sizes, and total savings tend to be homogenous by home type; total savings generally correlate to square footage, and single-family homes are typically larger than multifamily units. Claimed savings did not explicitly report home type, but AEG inferred home type by flags in the data (e.g., measures such as showerheads and LEDs had "MF" in the reported measure name).

Evaluation Adjustments. Figure 3-4 presents a summary of the impact evaluation adjustments from each activity. We discuss the drivers of each adjustment below.

Figure 3-4 RSOL Summary of Adjustments by Activity

- **Savings Replication.** AEG's savings replication increased energy savings by less than 1% and increased demand savings by 2% using the reported inputs and following the AR TRM. AEG identified the following discrepancies:
  - **Attic insulation.** Projects with efficient R-values between R-38 and R-49 were commonly rounded down to R-38. AEG credited these projects with additional savings by linearly interpolating the AR TRM's deemed savings values.
  - **Weatherstripping and outlet gasket measures.** Although CLEAResult used N factors (savings factors based on number of stories and wind shielding) that conform with the AR TRM, AEG found through its savings replication efforts that many projects had their claimed energy savings underestimated.
- **Desk Review.** AEG found that the documentation matched the database and made minor changes to sampled projects.
  - **Faucet aerators.** AEG used actual household occupancies and number of faucets aerators, which increased savings slightly.

  - **Attic insulation.** AEG adjusted the incremental increase in R-value for one project, which reduced savings.
- **Savings Verification.** AEG verified high ISRs for all measures, resulting in a weighted average ISR of nearly 100%.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2021 evaluation.

Stratum-Level Findings. Table 3-8 and Table 3-9 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and RSOL overall. At the channel level, the impact evaluation findings are at 5.0% precision (kWh) and 5.5% precision (kW) at the 90% confidence level. The relative precision for both energy savings and demand reduction exceed the minimum industry standards of 10% at 90% confidence (i.e., 90/10).

Table 3-8 RSOL Energy Savings Summary by Stratum

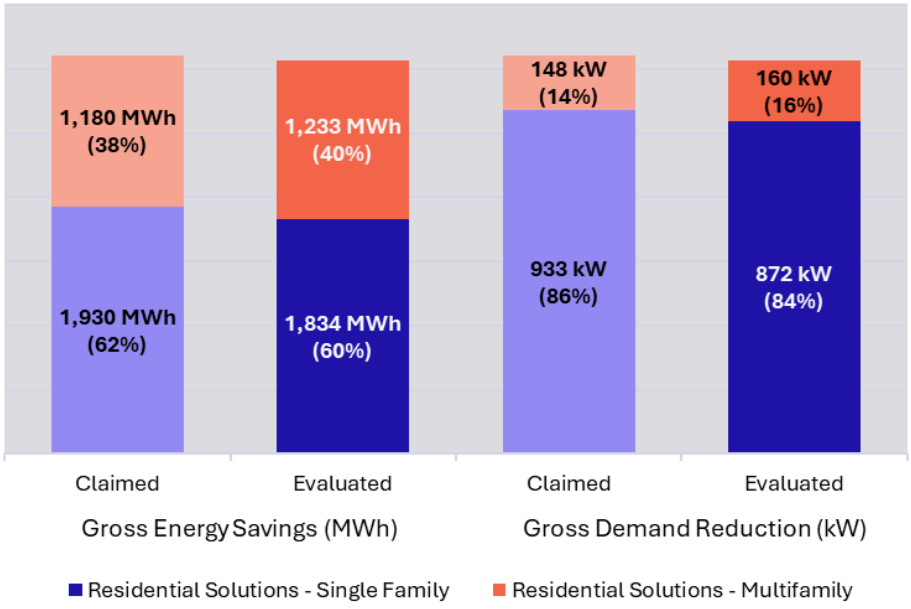
Stratum	No. of Projects	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Multifamily	2,002	16	1,180,230	1,233,075	104%	97,191	7.88%
Single Family	2,152	23	1,929,653	1,834,014	95%	117,506	6.41%
Total	**4,154**	**39**	**3,109,882**	**3,067,089**	**99%**	**152,492**	**4.97%**

Table 3-9 RSOL Demand Reduction by Stratum

Stratum	No. of Projects	Sample Size	Gross Demand Reduction (kW)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Multifamily	2,002	16	148	160	108%	11	6.62%
Single Family	2,152	23	933	872	93%	56	6.39%
Total	**4,154**	**39**	**1,080**	**1,032**	**96%**	**57**	**5.52%**

Figure 3-5 shows the stratum distribution of the GWh savings and MW savings. Single-family homes comprised the majority of evaluated energy savings (62%) and nearly all of the evaluated demand reductions (86%). Demand reductions are skewed toward single-family homes because multifamily homes are not eligible for attic insulation, EV chargers, doors, and windows. The largest contributors to demand reductions are attic insulation and windows.

Figure 3-5 RSOL Claimed and Evaluated Savings by Stratum



Measure-Level Findings. For evaluation activities that use a sampling approach, we expanded the sample at the stratum level rather than the measure level. As such, we do not officially calculate savings at the measure level, but we can still provide measure-level findings.

Table 3-10 and Table 3-11 show extrapolated findings summarized by measure for the multifamily and single-family strata, respectively. Measure-level realization rates account for the iterative adjustments from the savings replication, desk review, and verification activities, and the tables mainly illustrate the savings distribution among RSOL measures. Advanced power strips, attic insulation, and LEDs comprise 73% of claimed energy savings. Attic insulation drives 64% of the claimed demand reductions, followed by ENERGY STAR windows, which account for 12%.

Table 3-10 RSOL Multifamily Savings by Measure

Measure	No. of Projects	Gross Energy Savings (kWh)			Gross Demand Reduction (kW)		
		Claimed	Evaluated	RR	Claimed	Evaluated	RR
Advanced Power Strips	1,554	392,012	409,443	104%	40	48	121%
Faucet Aerators	1,229	131,064	136,924	104%	14	14	104%
LEDs	1,214	237,493	248,282	105%	38	39	104%
Outlet Gaskets DI	584	40,313	42,116	104%	11	11	104%
Showerheads	915	341,164	356,419	104%	35	37	104%
Weather Stripping DI	571	38,183	39,890	104%	10	11	104%
Total	**2,002**	**1,180,230**	**1,233,075**	**104%**	**148**	**160**	**108%**

Table 3-11 RSOL Single Family Savings by Measure

Measure	No. of Projects	Gross Energy Savings (kWh)			Gross Demand Reduction (kW)		
		Claimed	Evaluated	RR	Claimed	Evaluated	RR
Advanced Power Strips	818	237,080	214,109	90%	27	24	88%
Attic Insulation	482	1,163,706	1,115,154	96%	696	654	94%
ENERGY STAR Doors	46	8,016	7,636	95%	7	7	93%
ENERGY STAR Windows	379	164,456	157,223	96%	134	124	93%
Faucet Aerators	78	8,370	6,827	82%	1	1	79%
LEDs	726	244,211	235,788	97%	30	29	94%
Level 2 EV Charger	164	29,028	27,751	96%	3	3	93%
Outlet Gaskets DI	624	41,917	35,294	84%	27	22	82%
Showerheads	66	24,853	23,760	96%	3	2	93%
Weather Stripping DI	395	8,015	10,472	131%	5	6	128%
Total	**2,152**	**1,929,653**	**1,834,014**	**95%**	**933**	**872**	**93%**

Table 3-12 shows RSOL's net lifetime kWh savings by measure. Attic Insulation comprised 49% of lifetime energy savings.

Table 3-12 RSOL Net Lifetime Energy Savings by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
Advanced Power Strips	10	5,300,190
Attic Insulation	20	18,957,625
ENERGY STAR Doors	20	129,813
ENERGY STAR Windows	20	2,672,796
Faucet Aerators	10	1,221,886
LEDs	13	5,143,243
Level 2 EV Charger	15	353,830
Outlet Gaskets DI	15	986,975
Showerheads	10	3,231,524
Weather Stripping DI	15	642,116
Total	**14.8**	**38,639,998**

Net-to-Gross Analysis. As part of the participant survey, AEG assessed NTG ratios to be applied in PY2024. The resulting NTG ratio is roughly 9 percentage points higher (94%) than the ratio assessed in PY2021 (85%). AEG applied the PY2021 NTG ratio for this year's net savings. A full description of the NTG methodology can be found in Appendix D.

RSOL – Process Evaluation

Evaluation Approach. Table 3-5 (page 32) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A.

- For RSOL, AEG conducted separate, comprehensive **interviews with the OG&E program manager and CLEAResult program manager** to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- AEG administered an **online survey** to all participating customers with valid email addresses (1,875 participants). AEG received 297 completed surveys, a response rate of 16%. The survey covered topics such as awareness, motivation, and satisfaction, and AEG used results to estimate the channel's prospective NTG ratio for PY2024.
- AEG conducted a **cycle time analysis** to explore the time that elapses from installation to payment.

Channel Performance. Table 3-13 shows how RSOL performance changed from PY2022 to PY2023. Energy savings decreased by 75% and demand reduction decreased by 43%. Much of this change was due to moving the duct and air sealing measures to the Res HVAC channel. However, energy savings generated by measures not related to duct and air sealing increased 39%. RSOL makes a small contribution to HEEP overall, representing 5% of energy savings and 10% of demand reduction.

Table 3-13 RSOL Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	**Claimed**	**Share of HEEP**	**Claimed**	**Share of HEEP**	**PY2022 v. PY2023**
Energy (kWh)	12,261,396	19%	3,109,882	5%	-75%
Demand (kW)	1,904	17%	1,080	10%	-43%

Channel Operations. To participate in RSOL, single-family customers complete a home review either online using OG&E's HEETracker or through CLEAResult's call center, after which the customer is offered a free in-home assessment by an Energy Advisor. The Energy Advisor installs LEDs, advanced power strips, faucet aerators, and showerheads at no cost to the participant, provides EE education, and provides information about other incentives that OG&E offers for measures such as ENERGY STAR windows and doors, attic insulation, and more.

RSOL offers virtual audits as an alternative to on-site audits. While in-person audits may provide a better experience and more opportunities for savings, virtual audits make sense for a segment of customers. After completing the virtual audit, customers may schedule an Energy Advisor visit to install measures or request that DI measures be mailed for self-install. For about 15% of virtual audits that requested the mailed measures, a follow-up call is made to see if participants installed measures in the kit.

RSOL Customer Participation Process

Single Family

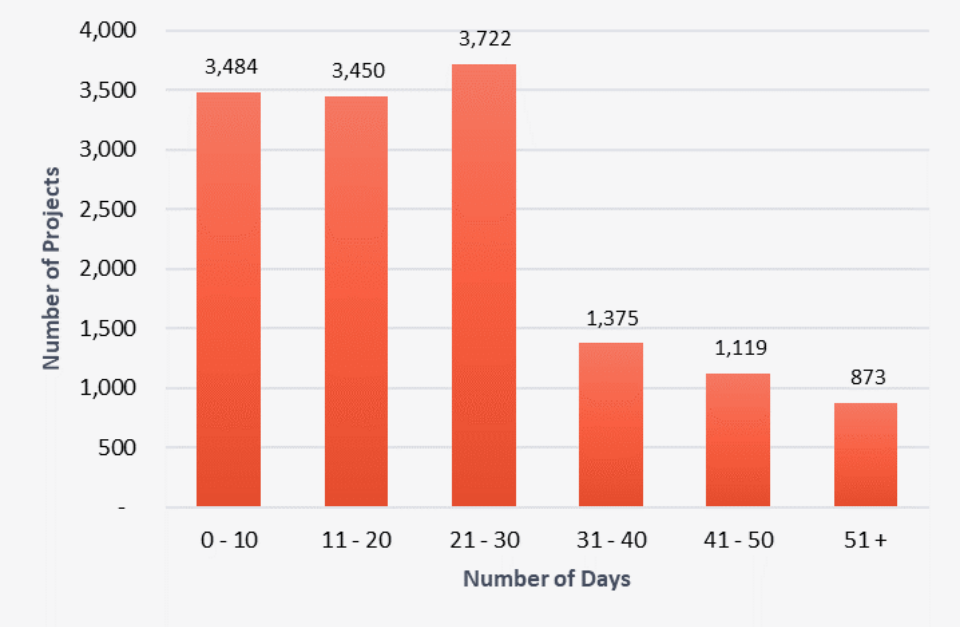
- Customers contact OG&E call center or participate in a virtual audit.
- Energy Advisor conducts no-cost in-home assessment.
- Energy Advisor conducts a blower door test and infrared camera imaging for homes built before 2016.
- Energy Advisor installs no-cost measures and provides EE education and information about other OG&E inducements.

Multifamily

- CLEAResult solicits property owners.
- Energy Advisors installs no-cost measures in all units.
- Energy Advisor conducts blower door tests and duct blasting.
- Energy Advisor installs additional no-cost weatherization measures as needed.

Cycle Time Analysis. Figure 3-6 shows the distribution of days from installation to payment for 14,023 projects with valid project dates in the database. Approximately 75% of all payments were received within 30 days of installation, with an average of 25 days.

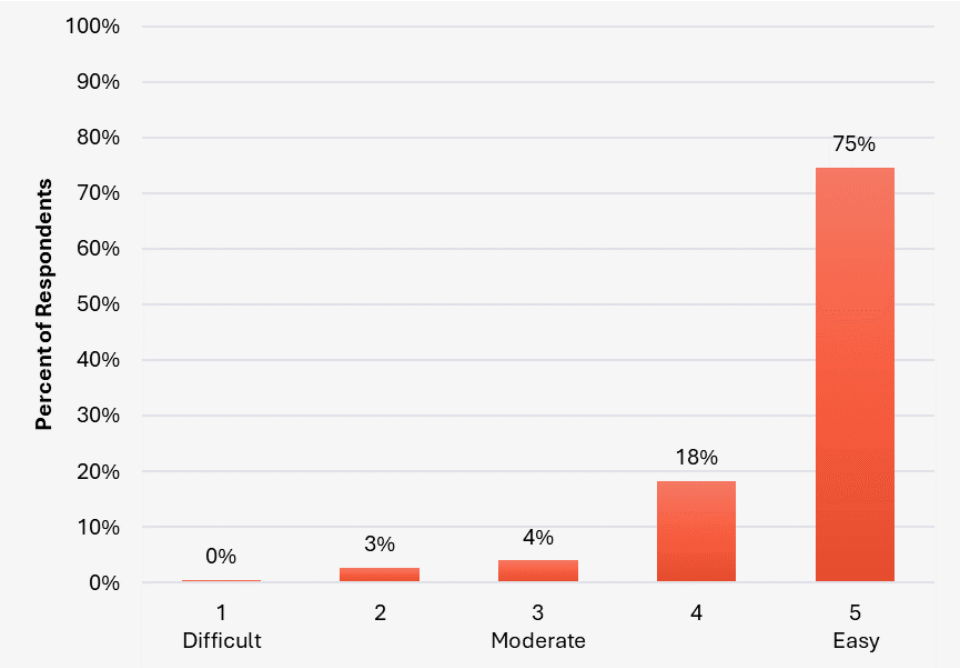
Figure 3-6 RSOL Number of Days from Install to Payment



Three respondents (1%) expressed dissatisfaction with the amount of time it took to receive the rebate. Two said they had yet to receive their rebates, and one said they had to complete a rebate application three times before receiving a rebate check.

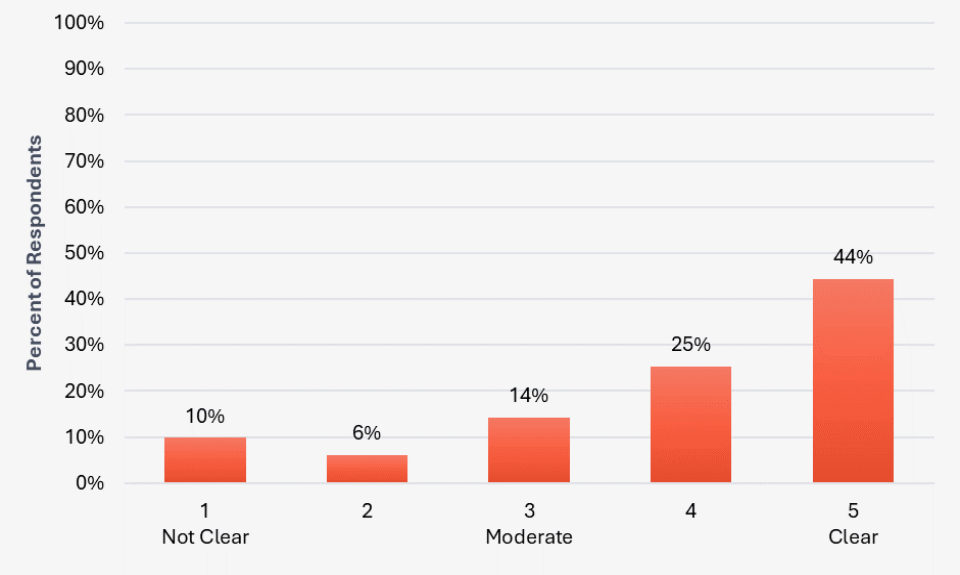
Channel Satisfaction. More than 80% of survey respondents were somewhat or very satisfied with their energy assessment experience. and as shown in Figure 3-7, participants reported that the scheduling of home energy assessments was quite easy, with only 7% of respondents scoring the scheduling experience a 3 or below (out of 5).

Figure 3-7 RSOL Ease of Scheduling Home Energy Assessment



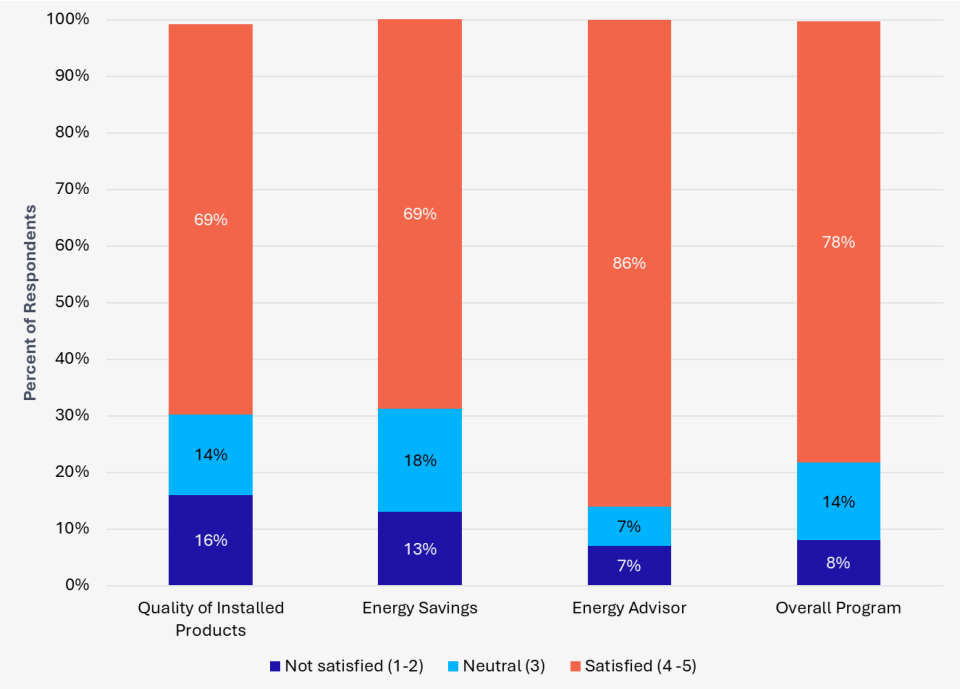
Respondents also found the educational materials relatively clear (Figure 3-8).

Figure 3-8 RSOL Clarity of Educational Materials



Overall satisfaction with the channel is quite high with 78% of survey respondents giving the channel a rating of 4 or 5 on a 5-point scale. Most participants were also satisfied with the Energy Advisor (86%), the energy savings from the measures installed (69%), and the quality of the installed products (69%).

Figure 3-9 RSOL Channel Satisfaction



In PY2023, OG&E added blower door tests and infrared camera imaging to the full assessment for customers with homes built before 2016. Customers seem to be responding well to the education piece that is part of the blower door test and have been happy with the addition.

> *"I enjoyed my representative, he explained everything to me so I could understand."*

According to the implementer, one impact of adding the blower test and thermal imaging to full assessments is that the process is more extensive and takes more time. Therefore, fewer appointments can be completed daily.

Channel Barriers. According to program staff, the biggest challenge for RSOL is awareness. Marketing includes email campaigns with a follow-up postcard targeted to rural areas and social media advertising. Marketing efforts have proven effective, generating immediate responses. OG&E's marketing efforts were delayed this program year; a 12-month marketing strategy will likely improve program awareness. The program implementer plans to continue to expand weatherization measures, providing customers with a more comprehensive solution.

Participants most commonly heard about RSOL through the OG&E website (20%), followed by information in the OG&E bill (13%) and word of mouth (12%).

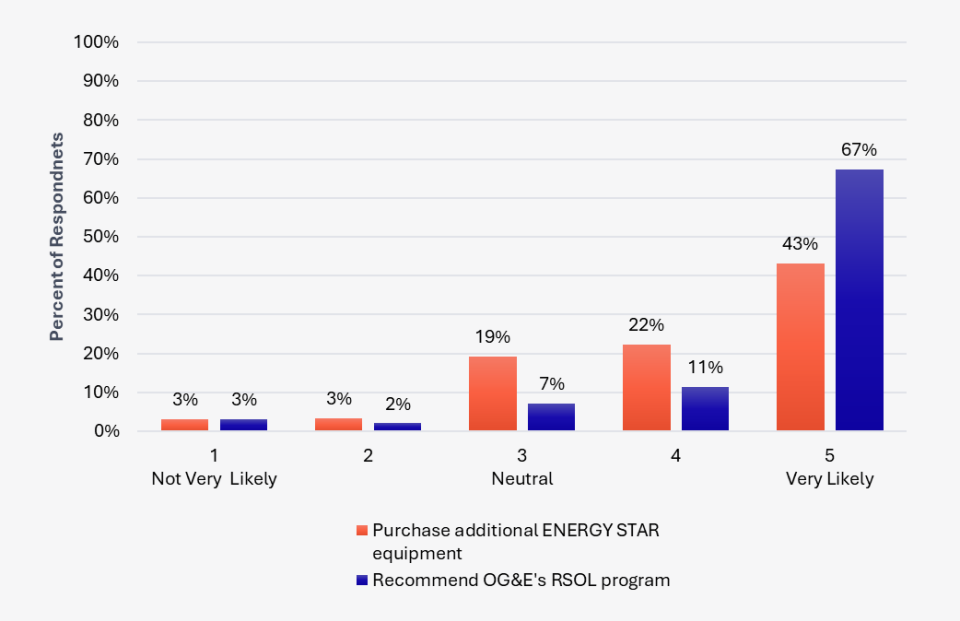
Customer comments regarding their experience with this program mention some areas of improvement:

- Increase program awareness
- Increase rebate amounts and limits
- Improve product quality (particularly weatherstripping)
- Include additional education on how to use the installed EE measures

A couple of participants said the Energy Advisor mentioned issues with their homes that were not included in the report, such as where air was leaking from their house and the specific areas in their attics that needed more insulation. They would like to have that information included in the report because they were unable to remember all the details from their conversations with their Energy Advisors.

Channel Effectiveness. Most survey respondents said they are likely to purchase additional ENERGY STAR equipment in the future (Figure 3-10). Seventy-eight percent of respondents said they would recommend RSOL to family or friends (4 or 5 rating out of 5).

Figure 3-10 RSOL Channel Impact



LivingWise® Schools Outreach (LivingWise)

This program channel consists of direct outreach through partnerships with local schools. The implementer, AM Conservation, recruits fifth-grade teachers to sign up and participate on the LivingWise

website. The channel is provided at no cost to the schools, teachers, parents, or students. The participant process is described as follows:

- Energy-saving kits and educational materials are provided to 5th-grade students explaining how they can improve EE at home.
- Teachers work directly with the program team to use the teaching aids and distribute the DI kits to their students.
- Students take the kits home and install the measures with the assistance of their parents while completing the accompanying educational materials.
- After completing the curriculum, the students receive a Schools Outreach wristband and a certificate of achievement for participating in the channel.
- The students also receive a home energy worksheet (HEW) to fill out at home and return to their teacher. Teachers receive the completed survey responses and submit them to the channel implementer.

Each kit contained the following measures:

- 9W LEDs (2)
- Tier 1 smart strip
- Low-flow bathroom faucet aerator
- Low-flow kitchen faucet aerator
- Low-flow showerhead
- Water heater setback card (behavioral recommendation)

LivingWise – Key Evaluation Findings

The **impact evaluation** established LivingWise evaluated gross energy savings of 1,788,489 kWh and evaluated gross demand savings of 199 kW, which amount to realization rates of 103% and 100%, respectively. Table 3-14 provides a summary of the LivingWise impact evaluation findings.

Table 3-14 LivingWise Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	1,733,614	1,788,489	103%	1,788,489	100%	18,073,453
Demand (kW)	199	199	100%	199	100%	n/a

The **impact evaluation** resulted in the following key findings:

- **AEG found higher evaluated savings than claimed** by utilizing HEW data for water heating measures and making methodological changes to LED ISRs.
- **Homes with school-aged children tend to have more occupants** than average (as deemed by the AR TRM), thereby increasing savings for water-saving measures.
- **Claimed savings include teacher kits.** Typically, teacher kit savings are not claimed since most teachers are repeat participants. AEG used a conservative approach and excluded teacher kits from evaluated savings.
- **Tier 1 smart strips increased per-kit savings by about 106 kWh.** It was successfully implemented and achieved a high ISR (60%).
- **Additional savings were generated by measures not in the AR TRM.** AEG estimated additional kit savings from the water heater setback measures. AEG used the PA TRM for the algorithms and used HEW data and AR TRM-specific inputs such as interactive effects and groundwater temperature.

The **process evaluation** resulted in the following key findings:

- **Teacher retention is a growing challenge for the channel.** There has been a lot of teacher turnover, and teachers are overburdened. Yet, 100% of participating teachers said they would recommend LivingWise to colleagues.
- LivingWise receives **positive feedback from teachers and parents.** However, only one-third of students report working on the program with their families indicating they installed the measures themselves, or another family member did without the help of the student. This is a large decrease from PY2022, leaving room for improvement.
- **Kits were changed** from being in cardboard boxes to **a drawstring bag** that the kids can wear like a backpack. This elicited a positive response from both teachers and kids. In addition, bags are reusable so there is less waste as well.

LivingWise – Recommendations

The **impact evaluation** recommendations are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- **Use a different TRM to calculate faucet aerator energy savings.** See *RSOL – Recommendations* for more details.
- * **Review claimed savings per kit using AEG's proposed methodology.** AEG's methodology incorporates industry-best practices, all products in the kit, and actual home characteristics. It is more accurate than the default savings in the AR TRM.
    - AEG can work with AM Conservation to ensure our methodologies and assumptions are aligned and reasonable.
    - Consider reporting per-unit savings for all measures.
- * **Explore additional measures for kits, such as LED nightlights and Tier 2 smart strips.** LED nightlights, which had been distributed through LivingWise in prior program years, can add roughly 20 kWh per kit. Meanwhile, 60% of HEW respondents installed their Tier 1 smart strips, which suggests feasibility for more-efficient Tier 2 smart strips.
- * **Account for repeat participation among teachers or exclude teacher kits from claimed savings all together.** For example, a unique teacher ISR would account for teachers who participate and the receive the same kit items year over year, which they may not need or install after their first year in the program.
- * **Augment HEW survey questions to improve data collection and energy savings verification.**
    - Ask for the total number of bathroom faucets and showerheads in the home.
    - Convert the question that asks for the number of occupants per home from multiple choice to fill-in-the-blank.
    - Add a question that determines the initial temperature of the water heater prior to the setback, either as fill-in-the-blank or multiple choice. For example:
        - 121° to 124° Fahrenheit
        - 125°F to 129°F
        - 130°F to 134°F
        - 135°F and above
    - Ask for the wattages of the existing bulbs replaced by the kit's LEDs.

The **process evaluation** recommendations are as follows:

- **Consider adding AM Conservation's high school program, FutureWise.** The OG&E program manager feels there is a missed opportunity among high school students, and AM Conservation offers a high school curriculum.
- **Move the teacher and parent surveys from paper to online or provide an online option.** This will make it easier for teachers to administer and track, will save on data entry costs, and may boost the low parent and teacher response rate.

- **Reward students who share the kit/activities with their families.** Include stickers or other low-cost incentives for students who install various components of the kit or perform activities at home with their families.

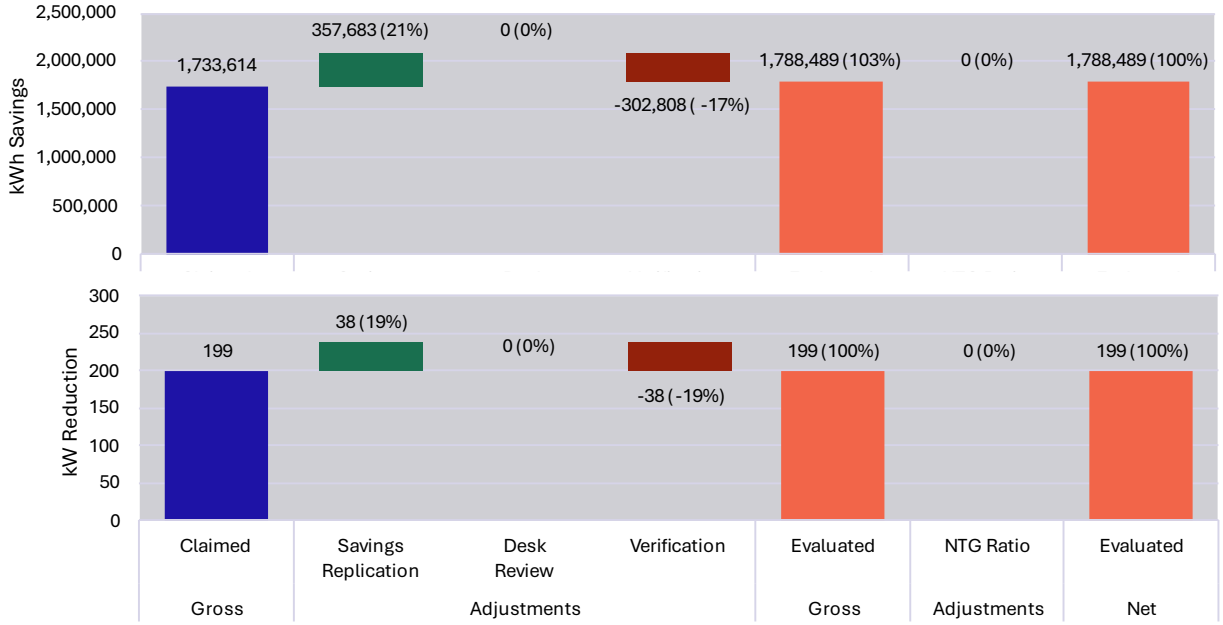
LivingWise – Impact Evaluation

Evaluation Approach. Table 3-4 (page 31) summarizes the impact evaluation activities conducted to determine evaluated savings.

- AEG used HEW survey data to complete our **savings verification**. We did not field an additional survey.
- AEG applied the PY2021 NTG ratio to derive PY2023 net savings.

Evaluation Adjustments. Figure 3-11 summarizes impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 3-11 LivingWise Summary of Adjustments by Activity



- **Savings Replication.** AEG attempted to replicate savings according to the AR TRM and using prior-year (PY2022) values for in-service rate (ISR) and water heater saturation rate. In PY2024, we will work with AM Conservation to address the data requirements for this analysis, including the acquisition of current-year in-service and water heater saturation rates.
- **Savings Verification.** AEG analyzed HEW survey data and updated inputs to savings for several measures:
  - **Low-flow aerators and showerheads.** AEG used the actual occupants per home and the actual number of faucets and showerheads per home instead of the TRM defaults. This increased energy savings but decreased gallons saved.
  - **LEDs.** AEG used the Uniform Method Project's (UMP) three-year trajectory for ISRs. The UMP's suggested methodology assumes that 24% of LEDs received by participants but stored for later use get installed yearly for two years. AEG also applied the EISA 2007 standard, lowering the baseline from 43W to 20W. This reduced savings.
  - **Advanced power strips.** AEG uses the AR TRM deemed savings for "Whole System Average," which increased savings.
  - **Water heater setback cards.** AEG added energy savings for water heater setbacks by using HEW data in conjunction with the AR TRM. OG&E had not claimed savings for this measure.

- **Net-to-Gross.** AEG applied the NTG ratio from the PY2021 evaluation.

Stratum-Level Findings. Table 3-15 and Table 3-16 show the evaluated savings and the corresponding precision at the 90% confidence level for each kit and LivingWise overall. At the program level, the impact evaluation findings are at 8.0% precision (kWh) and 5.1% precision (kW) at the 90% confidence level. The relative precision for both energy savings and demand reduction exceed the minimum industry standards of 10% at 90% confidence (i.e., 90/10).

Table 3-15 LivingWise Energy Savings Summary by Stratum

Stratum	No. of Kits	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Kit 2 - 2023	8,811	1,344	1,733,614	1,788,489	103%	142,606	7.97%
Total	**8,811**	**1,344**	**1,733,614**	**1,788,489**	**103%**	**142,606**	**7.97%**

Table 3-16 LivingWise Demand Reduction Summary by Stratum

Stratum	No. of Kits	Sample Size	Gross Demand Reduction (kW)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Kit 2 - 2023	8,811	1,344	199	199	100%	10	5.07%
Total	**8,811**	**1,344**	**199**	**199**	**100%**	**10**	**5.07%**

Measure-Level Findings. Table 3-17 shows each iteration of stratum-evaluated per-unit electric energy, electric demand, gas energy, gas demand, and water savings.

Table 3-17 LivingWise Kit 2 – 2023 Per-Unit Savings

Measure	Qty per Kit	Evaluated Savings per Kit	
		kWh	kW
Advanced Power Strip	1	106	0.012
Bathroom Faucet Aerator	1	13	0.001
Kitchen Faucet Aerator	1	7	0.001
LEDs	2	14	0.002
Showerhead	1	61	0.006
Water Heater Setback	1	2	0.000
Total	**7**	**203**	**0.023**

Table 3-18 shows the average measure ISRs. Note that these averages were not used to directly calculate measure and kit savings since AEG extrapolated the HEW sample results at the household level. AEG's approach accounts for the in-home correlation of measure ISRs. Per HEW responses, AEG calculated an average electric water heater saturation rate of 41%.

Table 3-18 LivingWise Average Measure ISRs

Measure	ISR
Advanced Power Strip	60%
Bathroom Faucet Aerator	26%
Kitchen Faucet Aerator	25%
LED[5]	71%
Showerhead	34%
Water Heater Setback	14%

Table 3-19 shows the net lifetime savings by measure. Advanced power strips comprise nearly half of net lifetime savings.

Table 3-19 LivingWise Net Lifetime Energy Savings by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
Advanced Power Strip	10	9,379,067
Bathroom Faucet Aerator	10	1,108,515
Kitchen Faucet Aerator	10	638,805
LEDs	13	1,533,640
Showerhead	10	5,383,885
Water Heater Setback	2	29,541
Total	**10.1**	**18,073,453**

LivingWise – Process Evaluation

Evaluation Approach. Table 3-5 (page 32) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A.

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and the AM Conservation program manager** to gather their impressions of the program's implementation activities, performance, delivery issues, and opportunities for improvements.
- AM Conservation conducts **participant surveys** annually with participating teachers, students, and parents. AM Conservation received completed surveys from 18 teachers, 1,344 students, and four parents, all reductions from PY2022.

Channel Performance. Table 3-20 shows LivingWise's claimed energy savings and demand reduction decreased by 20 and 23% respectively from PY2022 to PY2023. The channel's contribution to HEEP stayed the same.

Table 3-20 LivingWise Claimed Savings – 2022 v. 2023

	PY2022		PY2023		% Diff.
Gross Savings	**Claimed**	**Share of HEEP**	**Claimed**	**Share of HEEP**	**2022 v. 2023**
Energy (kWh)	2,258,978	3%	1,788,489	3%	-20%
Demand (kW)	259	2%	199	2%	-23%

Channel Operations. LivingWise is a 5th-grade education-based program that achieves energy savings by providing participating students with a take-home kit that includes EE and water-saving measures. The program is implemented in 104 schools in OG&E's service territory.

[5] Average ISR of both LEDs shown. AEG calculated ISRs individually for each of the two LEDs in the kit but are reporting the average for simplicity.

In PY2023 the kits were changed from being in cardboard boxes to a drawstring bag that the kids can wear like a backpack. This elicited a positive response from both teachers and kids. In addition, bags are reusable so there is less waste. Teachers are also provided with curriculum materials that comply with Oklahoma education standards. AM Conservation administers surveys to students, parents, and teachers. It also administers pre- and post-participation quizzes to measure student learning.

Teachers are primarily recruited via email. In addition, AM Conservation conducts direct telephone outreach when necessary and has also promoted LivingWise on social media. The OG&E program manager promotes it in schools, and participating teachers share their program experiences via social media, which helps it grow organically.

Barriers to Participation. According to AM Conservation, teacher turnover continues to be a barrier to participation. In the past, LivingWise relied heavily on long relationships with teachers. But now that more teachers are retiring, leaving the profession, or changing grades, AM Conservation doesn't have as large of a base of returning participants. In addition, AM Conservation said teachers are overworked, which makes it difficult to induce their participation:

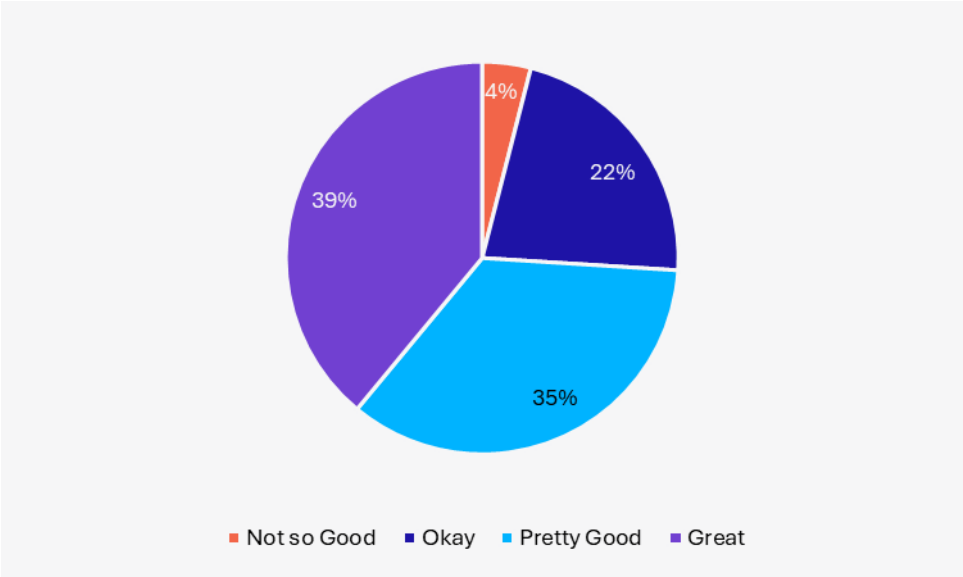
> *"There is too much on teachers' plates. Enrollment messages can get lost. It's a constant challenge to get the attention of teachers."*

Channel Satisfaction. The implementer and OG&E have built a very strong relationship over time. As a result, LivingWise functions extremely well.

According to AM Conservation's survey results, LivingWise is well-received by parents, teachers, and students. The four parents who completed the survey gave very favorable responses about LivingWise. All teachers who responded to the survey would use LivingWise again and would recommend it to a colleague.

All responding teachers agreed (44%) or strongly agreed (56%) that the products in the kit were easy for students to use. Figure 3-12 shows that most students rated LivingWise as great or pretty good, with more students who received kits during the fall semester rating the program favorably.

Figure 3-12 LivingWise Student Rating of LivingWise Program



Approximately one-third of students said they worked with their families on the program[6] meaning that compared to nearly half of students last year. A similar percentage of students who received kits said that their families changed how they used energy (34%).

The survey asked teachers what they felt the students liked best about LivingWise. Their responses are shown in the word cloud in Figure 3-13. The larger the word, the more times it was mentioned.

Figure 3-13 LivingWise Teachers' Responses about What Students Liked Best About the Program

Recommendations for Improvement. When asked what they would change about LivingWise, teachers had the following suggestions and comments:

- Lengthen the due date; the best time for teachers to participate is the end of the year after state testing
- Include more activities in the student book
- Ensure the correct number of kits are provided
- Offer materials in Spanish
- Include a digital component (e.g., PowerPoint or Google Doc) for each lesson

The OG&E program manager would like to offer a high school version of the program. She would like this to include more-advanced kit measures and activities. AM Conservation offers a high school program called FutureWise.

Residential HVAC Replacement and Tune-Up (Res HVAC)

This channel focuses on energy savings by optimizing existing HVAC units and replacing HVAC systems that have failed (replace on burnout, or ROB). It also provides inducements for air and duct sealing measures. This offering is designed as a market-driven approach that utilizes local HVAC contractors for the completion of the work.

[6] This suggests that roughly two-thirds of students either installed the kit measures on their own or a family member installed them on behalf of the student, without the student's direct participation.

Customer-requested HVAC tune-ups, air and duct sealing, or unit replacements are completed through a network of participating contractors. When customers contact the HEEP program, the implementer, CLEAResult, refers them to available contractors or schedule an appointment for them. Contractors complete the tune-up, air and duct sealing, or HVAC unit replacement, the data collection on system performance, and the paperwork required to submit the applicable channel rebate forms. Once the application has passed the channel requirements review, it is processed, and the rebate is paid directly from OG&E to the contractor.

Table 3-21 lists the available measures in the Res HVAC channel and the corresponding inducements.

Table 3-21 Res HVAC Measures

Measure	Inducement
A/C tune-up	Up to $250
New HVAC system (ROB)	Up to $3,000
Refrigerant filled to requirement	Full cost
Air/duct sealing	Full Cost

Res HVAC – Key Evaluation Findings

The **impact evaluation** established Res HVAC evaluated gross energy savings of 10,481,324 kWh and evaluated gross demand savings of 2,705 kW, which amount to realization rates of 92% and 98%, respectively. Table 3-22 provides a summary of the Res HVAC impact evaluation findings.

Table 3-22 Res HVAC Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	11,370,839	10,481,324	92%	8,280,246	79%	103,278,124
Demand (kW)	2,753	2,705	98%	2,137	79%	n/a

The **impact evaluation** resulted in the following key findings:

- **AEG found the claimed methodology sound.** We made no changes to most measures and minor changes to a handful of measures.
- **Air infiltration and duct sealing claimed savings are overstated for multifamily customers**. In the AR TRM these savings are calculated for single-family homes. AEG applied a 77% duct correlation factor for PY2023 Q1 and Q2 and a 49% duct de-rate factor in Q3 and Q4. This issue was identified during in 2023, during the PY2022 evaluation. As such, CLEAResult adjusted claimed savings for PY2023 midway through the program year.

The **process evaluation** resulted in the following key findings:

- Res HVAC added an **internal Trade Ally to conduct tune-ups in rural areas**, which has worked well with very positive customer response. For Trade Allies, the opportunity cost of traveling long distances makes it difficult to serve rural and hard-to-reach customers.
- Trade Allies are **satisfied with their experiences with the channel and with CLEAResult**. CLEAResult is very responsive and typically helps fix any issues and answer any questions the same day. CLEAResult's marketing efforts provide plentiful leads to the Trade Ally network and result in solid, long-term customers for the Trade Allies.

Res HVAC – Recommendations

The **impact evaluation recommendations** are as follows:

- **Conduct quality assurance checks** to verify the correct efficiencies (i.e., EER2 and SEER2), capacities, and climate zones used to calculate savings across HVAC Tune-Up projects. Data accuracy will improve claimed savings estimates.
- **Continue to apply a duct de-rate factor of 49% to air infiltration and duct sealing measures** to appropriately adjust AR TRM savings for multifamily residences. The AR TRM overstates air infiltration and duct sealing energy savings for multifamily homes. The de-rate factor of 49% was determined and agreed upon by AEG and CLEAResult.

The **process evaluation recommendations** are as follows:

- **Re-evaluate incentive levels.** EE HVAC equipment can be very expensive and, according to Trade Allies, many customers balk at the cost.
    - AEG can work with OG&E to conduct HVAC incentive benchmarking.
- **Consider developing and maintaining a central scheduling system for contractors.** Several Trade Allies noted that scheduling appointments with customers can be difficult.
- **Conduct neighborhood canvassing outreach activities**. This would make it easier for Trade Allies to schedule customers who live closer together.

Res HVAC – Impact Evaluation

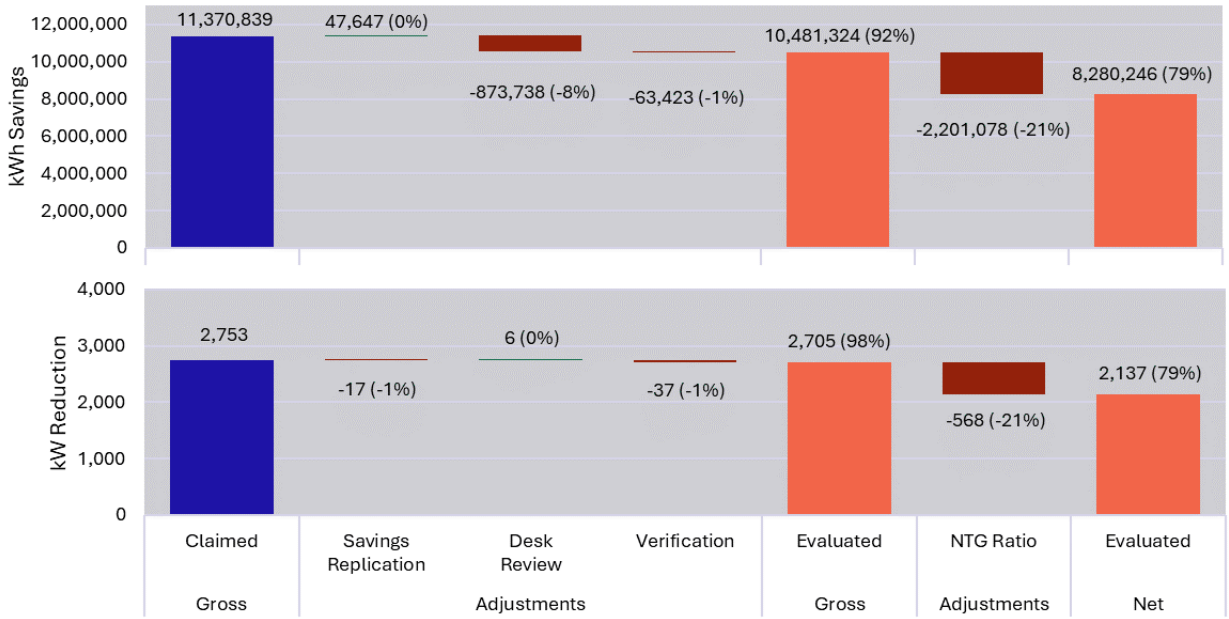
Evaluation Approach. Table 3-4 (page 31) summarizes the impact evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

- In addition to the **savings replication**, we conducted an **engineering review** of the savings by comparing claimed efficiencies and capacities of ROB equipment to the Air Conditioning, Heating, and Refrigeration Institute (AHRI) product database. We did not conduct traditional simple desk reviews on a sample of projects as there was no additional documentation besides the data provided in the database.
- AEG completed **savings verification** via the participant survey administered for the process evaluation.
- AEG applied the PY2022 NTG ratio to derive PY2023 net savings.

The savings replication and engineering review activities were conducted on the census of projects. We used a stratified sampling approach for savings verification, stratifying the population by measure category: HVAC tune-ups, ROB equipment, and weatherization measures.

Evaluation Adjustments. Figure 3-14 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 3-14 Res HVAC Summary of Adjustments by Activity



- **Savings Replication.** AEG's savings replication increased savings slightly. We did not find major issues with any measures, and the energy savings differences are due to rounding.
    - **ROB.** OG&E did not report the EER rating of the efficient unit. Therefore, to calculate demand reduction, AEG back-calculated EER based on the reported efficient SEER rating.
    - **Duct sealing.** AEG followed the AR TRM, used reported heating and cooling types, and the difference in duct leakage at 25 Pascals. We adhered to the minimum requirements for pre-leakage described in the AR TRM. Overall, these increased the savings.
    - **Air infiltration.** AEG followed the AR TRM, using reported heating and cooling types and the difference in leakage at 50 Pascals. When data was not reported, we made assumptions about the maximum pre-leakage values, although we ultimately accepted them and did not adjust them. Our assumptions were conservative and likely did not reflect the actual characteristics of all homes in the channel. Even with conservative assumptions, most homes would not need adjusting pre-leakage values. Overall, we found a slight increase in savings.
- **Desk Review.** AEG found minor differences in efficiencies and capacities between the program tracking database and the AHRI database.
- **Savings Verification.** AEG's online survey found that most measures were installed and operating.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2022 evaluation.

Stratum-Level Findings. Table 3-23 and Table 3-24 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and Res HVAC overall. The relative precision for both energy savings and demand reduction exceed the minimum industry standards of 10% at 90% confidence (i.e., 90/10).

Table 3-23 Res HVAC Energy Savings Summary by Statum

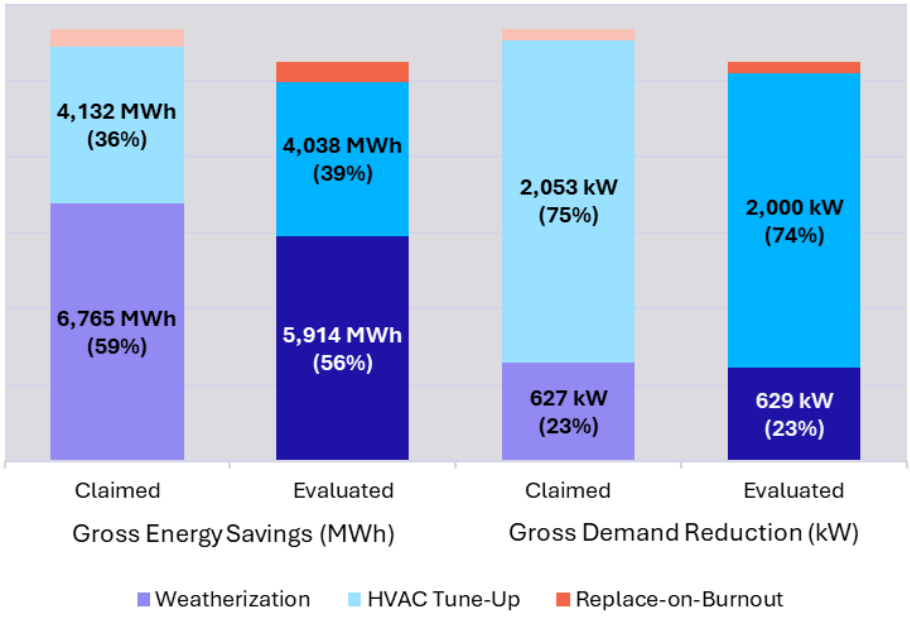
Stratum	No. of Projects	Gross Energy Savings (kWh)			90% Confidence	
		Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Weatherization	4,601	6,765,291	5,914,274	87%	0	0.00%
HVAC Tune-up	2,762	4,132,406	4,038,394	98%	50,089	1.24%
Replace-on-Burnout	286	473,142	528,656	112%	0	0.00%
Total	**7,649**	**11,370,839**	**10,481,324**	**92%**	**50,089**	**0.48%**

Table 3-24 Res HVAC Demand Reduction Summary by Stratum

Stratum	No. of Projects	Gross Demand Reduction (kW)			90% Confidence	
		Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Weatherization	4,601	627	629	100%	0	0.00%
HVAC Tune-up	2,762	2,053	2,000	97%	31	1.53%
Replace-on-Burnout	286	72	77	106%	0	0.00%
Total	**7,649**	**2,753**	**2,705**	**98%**	**31**	**1.13%**

Figure 3-15 shows the claimed and evaluated energy savings and demand reduction at the stratum level. The *HVAC Tune-up* stratum comprised 39% of evaluated energy savings and 74% of evaluated demand reduction.

Figure 3-15 Res HVAC Claimed and Evaluated Savings by Stratum



Measure-Level Savings. Table 3-25 shows the *Replace on Burnout* stratum's measure-level claimed and evaluated energy savings and demand reduction. Most ROB projects consisted of central air conditioning (CAC) replacements.

Table 3-25 Res HVAC Savings Summary by Measure

Measure	No. of Homes	Gross Energy Savings (kWh)			Gross Demand Reduction (kW)		
		Claimed	Evaluated	RR	Claimed	Evaluated	RR
CAC ROB	187	195,353	225,666	116%	25	30	121%
Geothermal HP ROB	28	92,732	97,744	105%	37	36	96%
Heat Pump ROB	66	169,303	188,126	111%	10	11	111%
Dual Fuel HP ROB	5	15,754	17,119	109%	0	0	64%
Total	**286**	**473,142**	**528,656**	**112%**	**72**	**77**	**106%**

- For geothermal HPs, claimed savings define the baseline according to the conditions under which a standard baseline air source heat pump (ASHP) would operate in Oklahoma, instead of using the AR TRM-deemed baseline ASHP. AEG also used this defined baseline in its evaluated savings calculations.

- **AEG found slight differences in the AHRI efficiencies and capacities** for CACs, heat pumps, and dual-fuel HPs.
    - For CACs, this difference increased the savings.
    - For HPs and dual-fuel HPs, this decreased the savings.

Table 3-26 shows each measure's lifetime energy savings. Using EULs from the AR TRM, we found that HVAC tune-ups contributed the most to the channel's lifetime savings.

Table 3-26 Res HVAC Net Lifetime Savings Summary by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
Weatherization	17	79,414,464
HVAC Tune-Up	5	15,951,655
Replace-on-Burnout	19	7,912,004
Total	**12.5**	**103,278,124**

Res HVAC – Process Evaluation

Evaluation Approach. Table 3-5 (page 32) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A.

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and the CLEAResult manager** as well as **Trade Ally interviews** with nine of 35 participating contractors to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.

Channel Performance. Table 3-27 shows that Res HVAC channel's claimed energy savings and demand reduction increased by 235% and 62% compared to PY2022. This is due primarily to air and duct sealing moving from RSOL to Res HVAC. (Previously, air and duct sealing generated nearly 9 GWh of energy savings for RSOL.) However, even in the absence of air and duct sealing, energy savings from ROB and tune-up measures increased by 36% from PY2022 to PY2023. Because of the addition of air and duct sealing to Res HVAC, the channel also saw increases in its contribution to HEEP savings overall.

Table 3-27 Res HVAC Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	Claimed	Share of HEEP	Claimed	Share of HEEP	PY2022 vs. PY2023
Energy (kWh)	3,393,347	5%	11,370,839	20%	235%
Demand (kW)	1,704	16%	2,753	26%	62%

Channel Operations. Res HVAC is administered primarily through Trade Allies who reach out to interested customers, complete and submit applications through the iManifold online platform, and schedule and complete the work. CLEAResult also markets the channel using bill inserts, social media campaigns, radio commercials, and direct emails to target people who have not had their ACs tuned up in the last five to 10 years.

CLEAResult staff train Trade Allies up front and make themselves readily available for questions, typically responding to Trade Ally inquiries the same day, often within hours. All Trade Allies interviewed by AEG were happy with their relationships with CLEAResult. CLEAResult's marketing efforts provide plentiful leads to the Trade Ally network, build contractors' customer bases, and result in solid, long-term customers for Trade Allies.

Channel Barriers. Multiple Trade Allies noted that the cost of refrigerant is a deterrent. In the past the channel provided one pound of refrigerant, but now OG&E requires that contractors to fill to requirement, a change that has increased the cost of tune-ups. OG&E raised the incentive from $200 to $250 to help overcome this barrier.

Scheduling can also be a concern. The drive times between customers' homes can make performing tune-ups unprofitable in rural and hard-to-reach areas:

> *"It's very tough as a Trade Ally to figure out how to make that offering profitable. If you don't schedule perfectly, you can have a long drive between customers."*

Some Trade Allies are not influenced by the equipment replacement incentive. The incentive amount is not worth the extra work required to participate:

> *"It's labor intensive to get the incentive. Multiple visits – sales call, work completed, follow-up visit (phone call or in-person). The program requires a lot of data. Seems like a lot of extra information that isn't needed."*

Trade Allies feel that dealers may not mention the rebate because they don't want to do the extra work. Another Trade Ally said he hasn't participated in Res HVAC in a while since OG&E increased the channel's SEER efficiency requirements. He said he doesn't see the benefit compared to the cost.

Recommendations for Improvement. Some Trade Allies would like more transparency about the channel's performance:

> *"It would be good to know if the program is changing, to know if there is a backlog of customers waiting to participate."*

Trade Allies also commented on the timing of the channel's marketing efforts. They expressed interest in moving the marketing campaigns to earlier in the spring and later in the summer.

> *"OG&E doesn't start marketing the program until early summer (June/July). They need to start marketing in spring. This past year, April and May was warm enough to start performing the work."*

> *"The timing of when the tune-ups are expected (needs to be at least 70 degrees outside) is difficult. The company has a lot of maintenance customers already, we have trouble squeezing in the program customers early in the cooling season. Would prefer to push them to the end of the season, but not all customers are interested in waiting."*

Positive Energy – New Home Construction (PE-NHC)

The PE-NHC channel is designed to work with builders and contractors and induce them to include energy efficient practices and measures when constructing new homes within the OG&E Oklahoma territory.

The program standards manual establishes comprehensive standards that address heightened performance requirements attached to the building envelope, attic insulation, fenestration, and mechanical systems, which a third-party Home Energy Rating System® (HERS) Rater must verify. Inducements are paid to contractors that successfully meet or exceed all the minimum requirements defined by the program standards manual. Inducements are tiered in three categories based on increasing levels of achievement.

PE-NHC - Key Evaluation Findings

The **impact evaluation** established PE-NHC evaluated gross energy savings of 2,652,866 kWh and evaluated gross demand savings of 886 kW, which amount to realization rates of 101% and 100%, respectively. Table 3-28 provides a summary of the PE-NHC impact evaluation findings.

Table 3-28 PE-NHC Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	2,619,696	2,652,866	101%	2,016,178	76%	33,286,068
Demand (kW)	886	886	100%	674	76%	n/a

The **impact evaluation** resulted in the following key findings:

- **AEG made no changes to savings for most homes in our desk review sample.** The few homes affected by changes, based on differences between the tracking data and the actual HERS rating provided for each home, experienced a slight increase in savings collectively.
- **Not all homes met all PE-NHC requirements.** However, this did not affect the savings as the models already accounted for this. Four of 24 sampled homes did not fully meet at least one of the channel's requirements, down from 13 last year. In all cases, they came close, and the decrease in failed tests represents an improvement for the channel.

The **process evaluation** resulted in the following key findings:

- **PE-NHC participation has grown** from 22 builders in PY2022 to 28 in PY2023.
- **Many builders have been involved in the program for several years.** They have permanently changed their building practices.
- **The availability of other incentives and tax credits make the PE-NHC channel less influential.**
- **All builders interviewed said all the houses they build are high-efficiency.** Some build affordable houses, and some build luxury homes.
- **Access to good HERS Raters has improved.** However, some builders have had to go through a few before they found a Rater they like to work with, and others have said there are not enough Raters available.
- **The new home construction market continues to face challenges,** including high-interest rates and increases in the costs of products and equipment.
- Fewer small homes are being sold. Higher-priced homes are less-affected by these market conditions.
- Most builders expect things to improve in 2024 or 2025.

PE-NHC – Recommendations

The **process evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- **PE-NHC may have a free ridership problem.** Most builders indicated they would build energy efficient homes absent PE-NHC, which suggests they are taking advantage of the incentives OG&E offers. This finding will place downward pressure on PY2024 evaluated savings, when AEG expects to apply the new NTG ratio.
    - **Offer an additional incentive tier for zero-energy or zero-energy-ready homes.** The cost of this could be offset by lowering incentives for other tiers, since most builders revealed themselves to be free riders to some degree.
    - Conduct additional research that will look at how program participation affects the price of homes, the measures installed, and the number of homes built.
- * **Encourage builders to meet all requirements for all builds.** Our desk reviews found that not all homes met all the channel's requirements, such as minimum levels of ceiling insulation, foundation insulation, and duct leakage.
- * **Promote the idea that EE makes homes more affordable.** Many builders install EE measures to keep their homes affordable and market them to customers based on their lower utility costs.
- **Increase outreach to new builders.** New builders unaware of the program not only will help increase participation and energy savings but also may help reduce issues with free ridership.

- **Showcase participating builders** on the OG&E website. This would make it easier for customers who value EE to find like-minded builders.

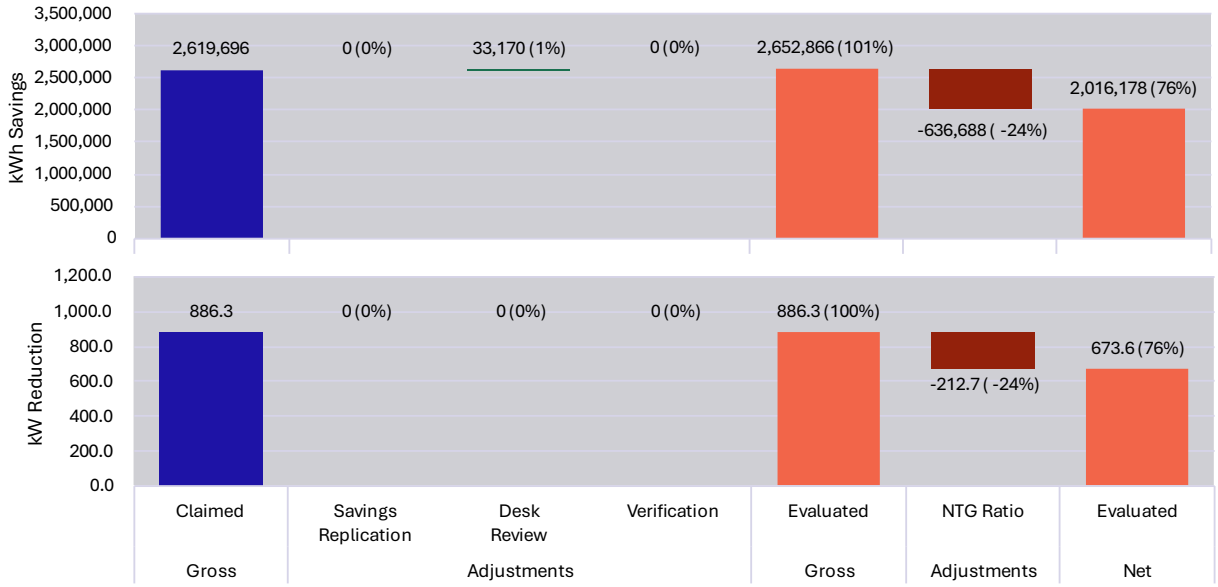
PE-NHC - Impact Evaluation

Evaluation Approach. Table 3-4 (page 31) summarizes the impact evaluation activities conducted to determine evaluated savings.

- AEG conducted **desk reviews** on a sample of as-built models using HERs ratings and reports provided in project documentation.
- AEG applied the PY2022 NTG ratio to derive PY2023 net savings.

Evaluation Adjustments. Figure 3-16 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 3-16 PE-NHC Summary of Adjustments by Activity



- **Desk Review.** AEG found no difference between claimed savings and the HERS report savings for 22 of the 24 sampled homes. Two projects had final HERS reports that did not match the claimed savings. Both instances showed minor differences, resulting in very small adjustments.
- **Savings Verification.** We did not conduct surveys or site visits this year. In previous years AEG shadowed HERS Raters and found they performed their jobs effectively and without bias or error.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2022 evaluation.

Sample Expansion Findings. Table 3-29 shows the evaluated savings and the corresponding precision at the 90% confidence level for PE-NHC overall. We found evaluated gross energy savings of 2,652,866 kWh and evaluated gross demand reduction of 886 kW, which correspond to realization rates of 101% and 100%, respectively. At the channel level, the impact evaluation findings are at 1.3% precision (kWh) and 2.2% precision (kW) at the 90% confidence level. The relative precision for both energy savings and demand reduction exceed the minimum industry standards of 10% at 90% confidence (i.e., 90/10).

Table 3-29 PE-NHC Energy Savings Summary by Stratum

Savings	No. of Projects	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Energy (kWh)	1,347	24	2,619,696	2,652,866	101%	34,338	1.29%
Demand (kW)	1,347	24	886	886	100%	19	2.17%

AEG found that four homes (of 24 sampled) did not meet at least one of the channel's requirements. In all cases, the as-built homes came close to meeting the requirements but failed at least one required test. Overall, these homes were much more efficient than the baseline home, and the models accounted for each home's actual characteristics, which did not affect savings. Additionally, the channel performed much better in this regard compared to last year, when 13 homes (54%) exhibited at least one failed test.

AEG assessed savings at the whole-home level, but for lifetime savings, we used EULs from the AR TRM and reported measure categories savings for a weighted whole-home EUL. Table 3-30 shows the measure categories, the EUL from the AR TRM, and the net lifetime energy savings.

Table 3-30 PE-NHC – EUL by Measure Category, Weight, and Net Lifetime Savings

Measure Category	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
Cooling equipment	19	25,543,861
Lights and appliances	12.5	9,442,879
Heating equipment	16	8,647,665
Water heater	13	163,053
Total	**16.5**	**33,286,068**

PE-NHC - Process Evaluation

Evaluation Approach. Table 3-5 (page 32) above summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A.

- In July 2023, AEG conducted separate, comprehensive interviews with the OG&E program manager and the CLEAResult program manager to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- AEG conducted in-depth interviews with 11 of 28 builders who participated in the program in the first three quarters of 2023. The interviews discussed the current new home construction market and program participation experiences and asked questions about the influence of the rebate on building practices.

Channel Performance. Table 3-31 shows PE-NHC's claimed energy savings and demand reduction decreased by 5% and 8% relative to PY2022, respectively. The channel also saw comparable contributions to HEEP relative to PY2022.

Table 3-31 PE-NHC – Claimed Savings PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	**Claimed**	**Share of HEEP**	**Claimed**	**Share of HEEP**	**PY2022 v. PY2023**
Energy (kWh)	2,765,270	4%	2,619,696	4%	-5%
Demand (kW)	959	9%	886	8%	-8%

Channel Operations. Participating builders work with a third-party HERS Rater to create energy models for participating homes. These energy models use certified energy modeling software to determine a home's savings. There are three levels of inducements based on the kWh savings driven by the home's square footage and determined by the HERS Rater. They also added a multifamily component that incentivizes multifamily homes (up to four stories) at a flat rate based on a reference home.

PE-NHC Customer Participation Process

- Builder enrolls in program and completes participation agreement.
- Builder constructs homes, installing a variety of EE measures.
- Builder identifies a HERS Rater to create an energy model for the home.
- Rater conducts pre-dry wall and final home inspections.
- Rater submits home to CLEAResult with energy model and rating.
- CLEAResult reviews energy model and documentation.
- CLEAResult sends inducement to builder.

Builders install a variety of equipment and measures to get the HERS rating they need for the OG&E inducement. Equipment installed routinely includes:

- Low-e windows
- Super-seal techniques
- Proper venting
- R-44 insulation
- Higher-efficiency HVAC system
- LED lights

Other measures mentioned by smaller numbers of builders include spray foam, house wrap, California corners, tankless water heaters, geothermal heat pumps, solar, all-electric homes, and 2' x 6' exterior construction.

Barriers to Participation. The housing market and the availability of HERS Raters—both barriers that were identified in the PY2022 evaluation—have since improved. Although PY2023 was a slower year for most builders, market conditions are gradually improving. Builders expect the market to continue to improve in 2024 and 2025. In addition, only three of 11 builders interviewed mentioned a shortage of Raters as an issue. Most builders have an established relationship with a Rater, although four builders said they had bad experiences with one or more Raters before they found one that worked for them.

Program staff continue to cite **the limitations on fuel-switching in Oklahoma** as a barrier to the program. As a result of these limitations, PE-NHC is unable to incentivize air source heat pumps specifically.

Value of EE. Most builders said they are committed to continuing to build high-efficiency homes, regardless of market conditions. Many builders see EE as a way to keep homes affordable amid rising interest rates and building costs:

> *"In Oklahoma we have a group of smaller builders. They are not totally focused on driving profit. They have a craftsman mentality and quality of homes is higher than you might see in places like Houston or Dallas. People have integrity and they want to build good homes. It's not all about profit."*

All builders reported that customers value EE in new homes, and most say realtors have started using EE as a selling point. Many feel that appraisers do not take EE into account when they value homes:

> *"Over the past decade the mindset has really changed. People are becoming more aware of EE – particularly on the mid- and lower-level affordable homes."*

All but one builder said they can easily predict their HERS score. They have incorporated EE measures and building techniques into their standard practices and know what to expect:

"We can guarantee what we are going to get every time."

Participant Satisfaction. Interactions with CLEAResult vary by builder, but all the builders had positive feedback about the program implementer and her responsiveness to questions and issues.

"They are amazing. I really like working with them."

All builders interviewed said they plan to continue participating in PE-NHC.

Channel Effectiveness. To understand the influence of the program on builders' construction practices, AEG asked a series of questions asking if the builder would continue to build the same number of homes at the same efficiency levels if the incentive was reduced. Most builders said they would accept a smaller incentive (or no incentive) and not change their building practices, indicating that the channel may have an issue with free ridership. But the results are complicated and it's difficult to predict what the impact of a lower incentive would have on the current market with higher interest rates and rising building costs. Also, since many of these builders have been participating for several years it's impossible to parse the influence of the channel on their current building practices.

Table 3-32 summarizes builders' responses on the impacts of the channel's rebate levels.

Table 3-32 PE-NHC – Influence of Incentive on Building Practices

Builder	Impact of Lower/No Rebate on Building Practices
Builder 1	Build all high efficiency homes and have no plans to change. Carbon footprint is very important. They make all EE improvements standard in their homes.
Builder 2	It would take some time, but if the program went away, they would eventually stop building EE homes. It would start with them building fewer homes because their prices would increase. If they couldn't keep their profits up, they would look for other cost savings and start cutting EE measures.
Builder 3	OG&E is just one factor and it's not a very influential one. Building EE is the right thing to do.
Builder 4	Owner likely would make decision to curb EE if the incentive was reduced.
Builder 5	They are not going to stop building EE homes, but the rebates are helpful because they let them keep their profit margin reasonable. If the rebate is less than $200 it's not worth it for them to participate but they would still build EE.
Builder 6	If the rebate got to $0, they would have to reassess. But not before then. EE is important to home buyers
Builder 7	The building code requires them to install a lot of EE measures already. But they probably would cut some of the super sealing techniques without the rebate
Builder 8	Would not participate in PE NHC if rebate was much lower but would still try and get rebates for geothermal heat pumps. That's how they are able to keep the utilities affordable for their customers.
Builder 9	Federal credits are much more important. OG&E program is not as influential
Builder 10	Would build the same way with a reduced or $0 rebate. Would still do third party inspections. There are state and federal tax credits available.
Builder 11	They are going to build our homes the same way regardless of the size of the rebate.

Consumer Products (CPS)

The Consumer Products (CPS) channel provides customers with instant, point-of-purchase inducements on select ENERGY STAR-qualified products and appliances at various retail locations. This channel also works with food banks to offer ENERGY STAR-qualified LED bulbs to patrons.

The goal is to provide a pathway for customers to get energy-efficient products into their homes outside of a contractor-driven installation. This channel aims to intervene after a customer has decided to purchase a new appliance or product, when the opportunity to educate them on higher-efficiency options is limited.

CPS targets purchasing decisions, aiming to influence customers towards buying higher-efficiency equipment and products. Marketing collateral on special pricing and benefits associated with higher efficiency appliances and products is displayed at the physical or digital location of purchase. Customers can compare options and benefits, but the inducements are meant to buy down the price to a level where

the decision to purchase the efficient option is relatively straightforward and can be guided largely by price alone. Inducements are provided upstream, midstream, and downstream for various technologies.

Table 3-33 shows the measures implemented in PY2023. A list of eligible measures for CPS can be found in Appendix C of OG&E 2022-2024 Demand Program Plan for Oklahoma.

Table 3-33 CPS 2023 Participation by Measure

Measure	Number of Rebated Measures
Advanced Power Strips	1,317
Bathroom Ventilating Fan	2,082
Dehumidifier	792
ENERGY STAR Interior LEDs	690
Room Air Purifier	1,011
Smart Thermostat	996
Water Dispenser	1,439
Window Air Conditioner Replacement	369
Total	**8,696**

CPS – Key Evaluation Findings

The **impact evaluation** established CPS evaluated gross energy savings of 38,932,289 kWh and evaluated gross demand savings of 5,065 kW, which amount to realization rates of 98% and 91%, respectively. Table 3-34 provides a summary of the CPS impact evaluation findings.

Table 3-34 CPS Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	39,584,658	38,932,289	98%	23,748,697	61%	288,639,057
Demand (kW)	5,593	5,065	91%	3,191	63%	n/a

The **impact evaluation** resulted in the following key findings:

- **LEDs drove CPS savings, but LED savings will decline in PY2024 and beyond because of EISA backstop enforcement.** AEG allowed one year of sell-through, in which LEDs sold through CPS prior to July 25, 2023 would not yet abide by the EISA backstop baseline wattage of 45 lumens per watt. AEG confirmed with CLEAResult that all LEDs incented through CPS were sold in the first two quarters of PY2023 and thus were unaffected by the backstop.
    - For **smart thermostats**, the AR TRM deems no demand reductions, indicating that any demand reductions associated with smart thermostats should be attributable to a designated demand response program or offering. This is consistent with TRMs in other jurisdictions. As such, smart thermostats achieved 0 kW with a 0% demand realization rate.
    - Of the **bathroom ventilating fans** sold through CPS, one model number contributed a substantial percentage of the measure's claimed energy savings but is not ENERGY STAR-qualified. While it otherwise adheres to ENERGY STAR's standards, it supplies a 1.3-kW heater that disqualifies it. As such, AEG applied zero savings to this model.

The **process evaluation** resulted in the following key findings:

- **The in-store field reps are very effective.** They are extremely popular with customers and are successful in educating both store employees and customers.
- **The main change to the channel has been the EISA backstop.** Knowing the EISA backstop would take effect in July, a lot of the partners, stores, and distributors pushed lighting as much as they could early in the year.

- **CPS does not yet feature an online marketplace component**. An online marketplace should expand access and increase participation and savings.
- **CPS has expanded its outreach to lower-income customers.** More Habitat for Humanity stores are participating, and power strips have been added to food bank offerings. Habitat for Humanity Restores will still be offering rebates for LEDs in low-income areas.

CPS – Recommendations

The **impact evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- **Provide information about OG&E SmartHours enrollment at the point of purchase.** The AR TRM deems no demand reductions for smart thermostats. As such, smart thermostats achieved 0 kW with a 0% demand realization rate. The AR TRM notes that any demand reductions that could be claimed for smart thermostats ought to be done so specifically through a demand reduction program that conducts and provides incentives for scheduled load-reduction events.
- **Review bathroom ventilating fan models incented through CPS.** The most-popular model sold through CPS in 2023 was not ENERGY STAR-qualified.
- **Update baseline consumption for water dispensers.** The AR TRM's assumption for daily on-mode standby consumption (2.19 kWh per day) is 83% higher than the baseline used by ENERGY STAR (1.20 kWh). For PY2023, AEG lowered the AR TRM's baseline by 22% (1.71 kWh). For PY2024 onward, AEG will use ENERGY STAR's baseline. This will reduce energy savings significantly but conform with contemporary standards.
- * **Calibrate claimed savings estimates with a reputable TRM for ENERGY STAR air purifiers, bathroom ventilator fans, and dehumidifiers.** In using deemed assumptions from the AR and PA TRMs, AEG calculated lower savings for these measures except for room air purifiers.

The **process evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * **Deliver an online marketplace that offers rebates for other commonly featured measures** such as occupancy-sensing wall switches, water heater pipe wrap, weatherization measures (e.g., air sealing and outlet and switch gaskets), and electric vehicle (EV) charging accessories. These additional measures will help offset the losses in lighting savings.
    - OG&E is already working on an online marketplace for future program years.
- **Increase the number of in-store field reps if the budget allows**. Reps are effective and popular with customers and store personnel.

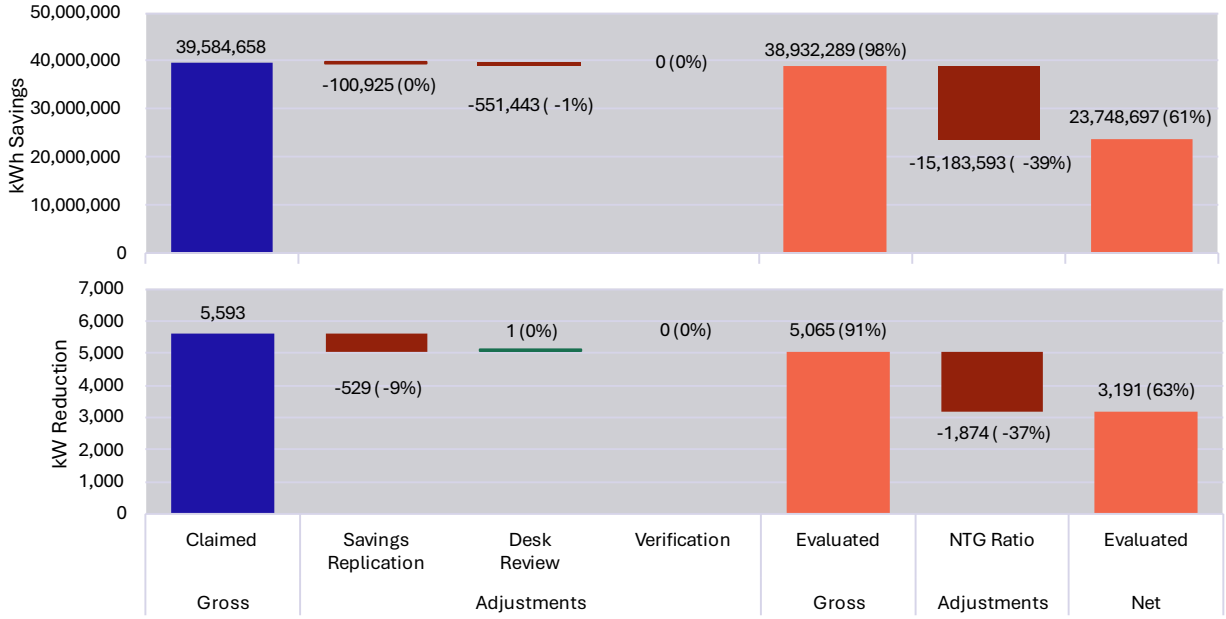
CPS – Impact Evaluation

Evaluation Approach. Table 3-4 (page 31) above summarizes the impact evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

- AEG conducted **savings replication** and **desk reviews** for the census of rebated measures.
- AEG used the PY2021 NTG ratio to derive PY2023 net savings. AEG conducted a NTG benchmarking analysis and will update the NTG ratio for PY2024.

Evaluation Adjustments. Figure 3-17 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 3-17 CPS Summary of Adjustments by Activity



- **Savings Replication.** AEG's savings replication decreased savings slightly due to Room Air Purifiers having lower savings deemed by the AR TRM than what was claimed. We did not find any major issues with most of the measures.
- **Desk Review.** AEG adjusted the methodology for ENERGY STAR air purifiers, water dispensers, bathroom ventilating fans, and smart thermostats.
    - **Smart thermostats.** The AR TRM assumes no peak demand reduction for smart thermostats outside of designated demand reduction programs. As such, AEG verified 0 kW of demand reduction.
    - **Bathroom ventilating fans.** AEG used the actual cubic feet per minute (CFM) and efficiencies of each unit in the channel. We updated the hours of use to be internally consistent with this evaluation. One model (7123-02-L) that comprised 35% of measure savings appeared to not be ENERGY STAR-qualified because of its 1.3-kW heater, so it received 0 kWh savings. This lowered savings dramatically for the measure overall.
    - **Air purifiers and dehumidifiers.** AEG used ENERGY STAR data for each model in the channel and the methodology in the AR TRM. This lowered the savings.
    - **Water dispensers.** AEG updated the savings methodology to source from ENERGY STAR instead of the 2016 PA TRM. This lowered the savings.
- **Savings Verification.** AEG did not conduct a verification survey for CPS. We used default ISR values in the AR TRM, which is reflected in the desk review adjustment.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2021 evaluation.

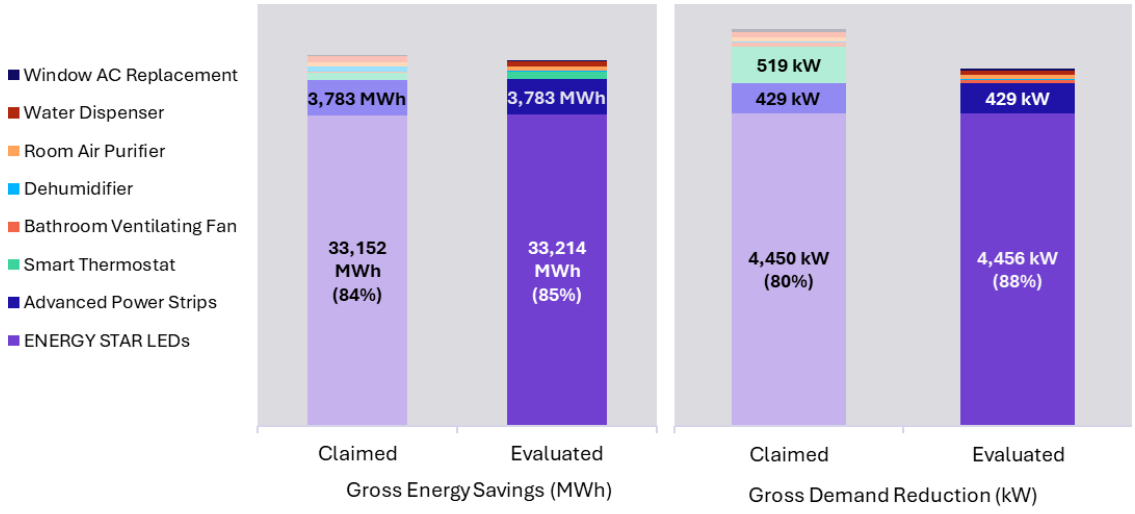
Measure-Level Findings. Table 3-35 shows CPS measure-level claimed and evaluated savings. Consistent with PY2022, LEDs comprised the majority of total evaluated energy savings (85%) and demand reduction (88%).

Table 3-35 CPS Savings Summary by Measure

Measure	No. of Measures	Gross Energy Savings (kWh)			Gross Demand Reduction (kW)		
		Claimed	Evaluated	RR	Claimed	Evaluated	RR
Advanced Power Strips	1,317	3,782,738	3,782,738	100%	429	429	100%
Bathroom Ventilating Fan	2,082	65,030	33,498	52%	8	3	43%
Dehumidifier	792	600,117	103,674	17%	17	24	136%
ENERGY STAR LEDs	690	33,151,578	33,213,911	100%	4,450	4,456	100%
Room Air Purifier	1,011	462,880	484,768	105%	52	56	106%
Smart Thermostat	996	819,727	779,400	95%	519	0	0%
Water Dispenser	1,439	667,293	499,005	75%	75	56	75%
Window AC Replacement	369	35,295	35,295	100%	42	42	100%
Total	**8,696**	**39,584,658**	**38,932,289**	**98%**	**5,593**	**5,065**	**91%**

Overall, LEDs drove the overall CPS savings and realization rates. Figure 3-18 shows the distribution of claimed and evaluated savings of the channel measures.

Figure 3-18 CPS Claimed and Evaluated Savings by Measure



Finally, Table 3-36 shows each measure's lifetime kWh savings. Using EULs from the AR TRM, we found that LEDs and advanced power strips contribute most to lifetime savings.

Table 3-36 CPS Net Lifetime Savings Summary by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
Advanced Power Strips	10	23,074,701
Bathroom Ventilating Fan	19	388,244
Dehumidifier	12	758,894
ENERGY STAR LEDs	13	253,256,069
Room Air Purifier	9	2,661,377
Smart Thermostat	11	5,229,775
Water Dispenser	10	3,043,931
Window AC Replacement	11	226,067
Total	**12.2**	**288,639,057**

CPS - Process Evaluation

Evaluation Approach. Table 3-5 (page 32) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A.

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and CLEAResult program manager** to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.

Program Performance. Table 3-37 shows CPS's claimed energy savings and demand reduction decreased by 12% and 9% relative to PY2022, respectively. The channel also saw comparable contributions to HEEP relative to PY2022.

Table 3-37 CPS Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	Claimed	Share of HEEP	Claimed	Share of HEEP	PY2022 v. PY2023
Energy (kWh)	44,893,412	68%	39,584,658	68%	-12%
Demand (kW)	6,132	56%	5,593	53%	-9%

Channel Operations. CPS operates like a traditional midstream point-of-purchase discount program. When customers purchase a qualifying measure at participating retailers, they receive an immediate discount at the time of purchase, with the exception of smart thermostats, which require a rebate form. Fifty-three retailers participate in the channel. CPS also provides no-cost LED lighting and power strips through the Regional Food Bank of Oklahoma. Twenty-one percent of the measures incentivized are distributed through the food bank.

Historically, CPS has relied heavily on efficient lighting measures, specifically LEDs. In July, U.S. Department of Energy (DOE) enforcement of the EISA backstop provision went into effect, dramatically undercutting energy savings. Habitat for Humanity Restores will still be offering rebates for LEDs in low-income areas.

CPS Customer Participation Process

- Customer visits participating retailer.
- Customer purchases eligible measure and receives point of purchase discount.
- Retailer provides sales information to CLEAResult.
- CLEAResult pays inducement to retailer.

Program staff are actively looking for additional measures to replace the energy savings from lighting. To expand visibility and access, program staff discussed pursuing an online marketplace through which customers can purchase discounted items, an alternative gaining popularity among similar upstream programs. An online store is expected to be in place in 2025.

Channel Effectiveness. CPS works hard to ensure customers know they are getting a discount on products because of OG&E. Signage is branded with the utility logo and uses phrases such as "specially priced by the utility company." The in-store field reps provide education to customers and store employees and

appear to be well received. Signage in stores is highly effective, and very little additional marketing is needed.

4 | WEATHERIZATION RESIDENTIAL ASSISTANCE PROGRAM (WRAP)

The Weatherization Residential Assistance Program (WRAP) achieves energy savings by improving comfort and reducing energy costs for OG&E Oklahoma's residential customers. The program design ensures the greatest benefit to the customers while achieving cost-effective energy savings. OG&E contracts with Skyline Energy Solutions (Skyline) to implement WRAP.

Participant Eligibility. Residential customers can apply for WRAP if they own, rent, or lease their single-family home, duplex, or mobile home and have annual household incomes at or below $60,000. Property owners of multifamily units whose rental units are 66% occupied by hard-to-reach customers, pursuant to OAC 165:35-41-3 definition of "hard-to-reach customers," are also eligible to apply. Some restrictions may prevent a customer from participating, including but not limited to an unvented space heater or open-flame heater as a main heat source.

Key Program Elements are as follows:

- **Customer verification (pre-screening and pre-qualification).** Customers interested in the program will receive initial outreach to confirm them as pre-screened eligible customers within the service territory. After confirmation, the customer will schedule an assessment of the home and undergo the pre-qualification assessment. This assessment ensures that participants meet the health and safety, economic, and technical requirements.
- **A comprehensive assessment of the customer's home.** Once the customer is prequalified, they will schedule a comprehensive audit of the home, during which Skyline develops a recommended action plan for weatherization upgrades for the homeowner.
- **Installation of a set of weatherization measures.** The Trade Ally and customer review the recommended action plan for the customer's home and decide on what upgrades to be completed.
- **Air conditioner tune-ups.** This measure was added to WRAP in late PY2022 and saw significant growth in PY2023.

Table 4-1 shows the measures implemented in PY2023. A list of eligible measures for WRAP can be found in Appendix C of OG&E 2022-2024 Demand Program Plan for Oklahoma.

Table 4-1 WRAP 2023 Participation by Measure

Measure	No. of Homes		
	Multifamily	Single Family	Total
AC Tune-Up	111	421	532
Air Infiltration	822	2,473	3,295
Attic Insulation	233	980	1,213
Duct Sealing	740	2,374	3,114
ENERGY STAR Ceiling Fan	0	6	6
ENERGY STAR Window	0	11	11
LEDs	555	2,014	2,679
Water Heater Jacket	77	1	78
Water Heater Pipe Insulation	138	3	141
Total Unique Homes	**825**	**2,509**	**3,334**

Repair-to-Qualify Initiative. Under OG&E's Innovation / Research and Development (R&D) support services, WRAP launched the Repair-to-Qualify (RTQ) Initiative in PY2022 to reduce the disqualification rate and increase participation, especially among hard-to-reach and resource-strained customers. The

WRAP program has a historical 50% disqualification rate, of which 25% are due to minor repairs. This initiative covers the cost of minor repairs required to qualify a home for the current WRAP program. This initiative covered the cost of minor repairs up to $1,000. The repairs may include flue, roof flashing, HVAC, and health and safety repairs.

WRAP – Key Evaluation Findings

The **impact evaluation** established WRAP evaluated gross energy savings of 13,023,462 kWh and evaluated gross demand savings of 3,284 kW, which amount to realization rates of 100%. WRAP achieved 119% of its net energy savings goals and 86% of its net demand reduction goals.

Table 4-2 provides a summary of the WRAP impact evaluation findings.

Table 4-2 WRAP Impact Evaluation Summary

Savings	Gross Savings			Net Savings				
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG	Lifetime
Energy (kWh)	13,046,111	13,023,462	100%	10,918,216	13,023,462	119%	100%	203,492,236
Demand (kW)	3,288	3,284	100%	3,807	3,284	86%	100%	n/a

The **impact evaluation** resulted in the following key findings:

- **AEG's engineering desk reviews found that the claimed inputs and savings in the database matched the documentation.** The database is populated automatically based on the implementer's interactions with WRAP's customers, which yields accurate results in the database. We also found that the implementer collected and reported all inputs required to calculate savings.
- **AEG used the most recent version of the AR TRM, which led to lower savings.** WRAP claimed savings uses unknown assumptions from the AR TRM V6 rather than that are not found in the AR TRM V9.1.
- **There are opportunities to install additional low-cost and high-savings measures common to many other income-qualified and residential programs in other jurisdictions.** Through WRAP, customers do not receive low-flow showerheads, low-flow kitchen aerators, low-flow bathroom aerators, and advanced power strips. Similar programs in other jurisdictions use these measures to help meet savings goals.

The **process evaluation** resulted in the following key findings:

- **WRAP and RSOL overlap.** The two programs, implemented by different contractors, often target the same homes. This is confusing for customers.
- Although initially behind in goals, **the program was able to increase participation** through community marketing. This had the added benefit of servicing homes more efficiently.
- The **RTQ Pilot has been very successful** in weatherizing customers' homes that would have been ineligible for WRAP.

WRAP – Recommendations

The **impact evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * **Update claimed savings to the most recent version (V9.1) of the AR TRM**. Energy savings for measure such as air infiltration, attic insulation, water heater jackets, and water heater pipe wrap have changed significantly since the AR TRM V6.
- **Calculate energy savings for water heater jackets installed in conditioned spaces.** The AR TRM deems savings only for water heater jackets installed in unconditioned spaces. Per OG&E's tracking data, only one installation (out of 78) was completed in an unconditioned space, resulting in realization rates of less than 2%.

  - Because savings are calculated using ambient air temperature (among other variables), a water heater jacket can still generate savings in conditioned spaces, just substantially less so.
  - AEG can work with OG&E and Skyline to either calculate different savings values for water heater jackets in conditioned spaces or identify a TRM in another jurisdiction that provides deemed savings values.
- * **Re-introduce low-flow showerheads, low-flow kitchen aerators, and low-flow bathroom aerators** to homes with electric hot water heaters.
  - Through similar programs in other jurisdictions, these measures typically achieve high cost-effectiveness and customer satisfaction.
  - Collect customer data regarding the number of showers, bathroom faucets, and occupants in serviced homes to better estimate energy savings. WRAP participants commonly live in smaller homes with more occupants than is deemed in the AR TRM (which provides average values for all homes, thus aggregating single- and multi-family home characteristics).
- * **Deliver advanced power strips**. The opportunity for savings is high in homes with entertainment centers and/or home offices.
- * **Expand the eligible list of LED bulbs to include specialty bulbs, such as reflectors and decorative/candelabra bulbs**. Additionally, continue installing general purpose omnidirectional (A19) LEDs in homes, and collect information about the shape and wattage of the replaced bulb.
  - Because of the EISA backstop, lighting measures will adopt baseline wattages will of 45 lumens per watt in the absence of baseline measure data. However, WRAP participants are likelier than the population to have inefficient lighting installed upon servicing. If Skyline diligently collects baseline data while in participants' homes, energy savings not only can be better estimated but also will likely be higher than estimated according to the EISA backstop.

The **process evaluation recommendations** are as follows:

- **Provide separate customer lists** for WRAP and HEEP. If a customer is eligible for WRAP, they should not be participating in HEEP.
- **Continue community marketing.** Focusing on underserved rural communities, can make travel to those areas worthwhile.
- **Add a RTQ component to WRAP.** The Pilot has been successful in providing necessary services to formerly ineligible customers.
- **Consider combining DR with WRAP.** If the next portfolio includes demand response, work to integrate SmartHours offerings with the portfolio to maximize value to customers and the utility. This recommendation applies to all measures with "smart" elements including thermostats and water heaters.

WRAP – Impact Evaluation

Evaluation Approach. Table 4-3 summarizes the impact evaluation activities conducted to determine evaluated savings.

- AEG completed **savings replication**, **desk reviews**, and **savings verification**. The participant survey delivered for the process evaluation informed savings verification efforts.

We include detailed descriptions of each activity in Appendix A.

Table 4-3 WRAP Impact Evaluation Activities

Program	Savings Replication	Desk Review	Savings Verification	NTG Ratio Update	Benefit-Cost Analysis
WRAP	✓	✓	✓		✓

AEG used a stratified random sample for desk reviews and savings verification. We defined the sample frame unit as one account number or one household and stratified the WRAP participant population by:

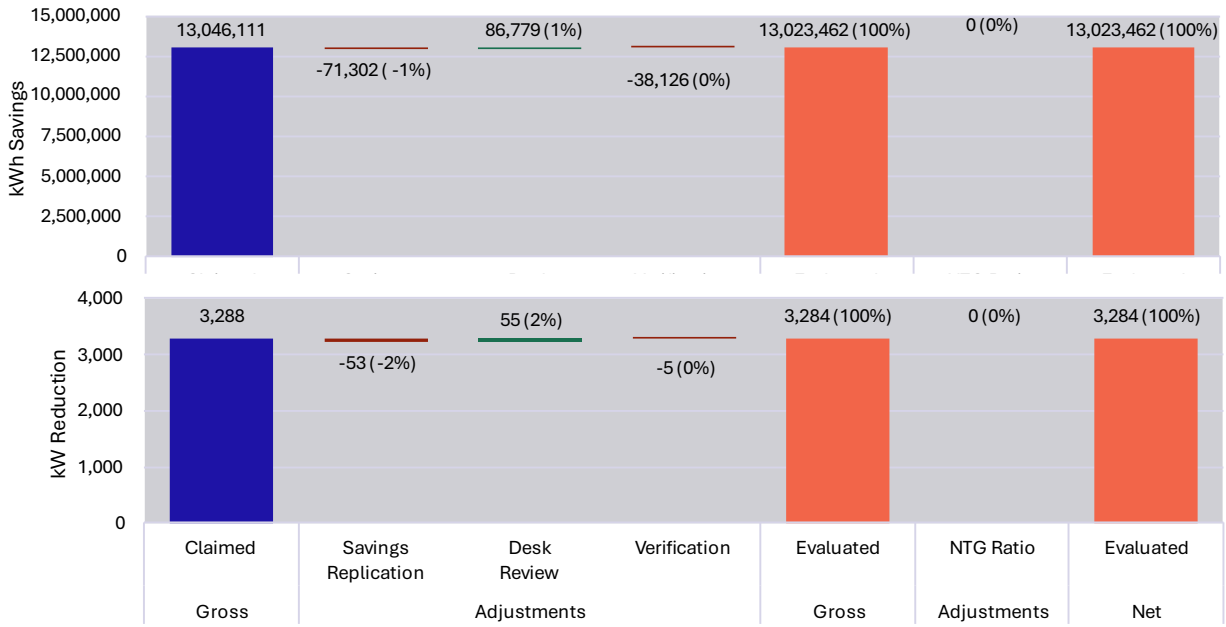
- **Home type (i.e., single- or multi-family)**, which is drives differences in household energy loads, and
- **Space heating fuel type (i.e., electric or gas)**, which is a key input in the total electrical load.

We present the impact evaluation findings as follows:

- Evaluation adjustments from each activity,
- Stratum-level findings, including confidence and precision,
- Measure-level findings, and
- Repair-to-Qualify Initiative performance.

Evaluation Adjustments. Figure 4-1 presents a summary of impact evaluation adjustments from each activity. We discuss the driver(s) of each adjustment below.

Figure 4-1 WRAP Summary of Adjustments by Activity



- **Savings Replication.** AEG followed the AR TRM V9.1, using the data reported in the database to complete the savings replication but was unable to perfectly replicate savings for air infiltration, attic insulation, and water heater pipe insulation. Overall, the differences were minor, but there were key differences for air infiltration (savings decreased slightly), attic insulation (increased slightly), water heater jackets (decreased greatly), and water heater pipe insulation (increased greatly).
    - Water heater jacket savings decreased greatly because the AR TRM V9.1 deems savings of 0 kWh for water heater jackets installed in conditioned spaces. All but one WH jacket was installed in a conditioned space, per tracking data.
- **Desk Review.** We made no changes related to the inputs of each measure. We found that for our sample, the documentation matched the database. Changes in the desk review sample reflect the minor calculation differences from the savings replication.
- **Savings Verification.** AEG fielded an online survey to verify that customers received the measures and that some measures, such as LEDs, were currently installed. Overall, AEG found the measure ISRs to be quite high, resulting in a small decrease in the overall savings.
- **Net-to-Gross.** WRAP is an income-qualified program with a stipulated NTG ratio of 100%. We did not conduct a free ridership analysis or spillover savings analysis for WRAP, and net savings are equal to gross savings.

Stratum-Level Findings. Table 4-4 and Table 4-5 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and WRAP overall. At the program level, the impact evaluation findings are at 0.9% precision (kWh) and 2.0% precision (kW) at the 90% confidence level. The relative precision for both energy savings and demand reduction exceed the minimum industry standards of 10% at 90% confidence (i.e., 90/10).

Table 4-4 WRAP Energy Savings Summary by Stratum

Stratum	No. of Homes	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Single Family – Gas	1,998	12	3,809,226	3,827,664	100%	83,367	2.18%
Single Family – Electric	511	12	4,326,233	4,344,779	100%	48,117	1.11%
Multifamily – Electric	711	12	4,721,455	4,662,852	99%	64,563	1.38%
Multifamily – Gas	114	12	189,196	188,166	99%	1,628	0.87%
Total	**3,334**	**48**	**13,046,111**	**13,023,462**	**100%**	**117,301**	**0.90%**

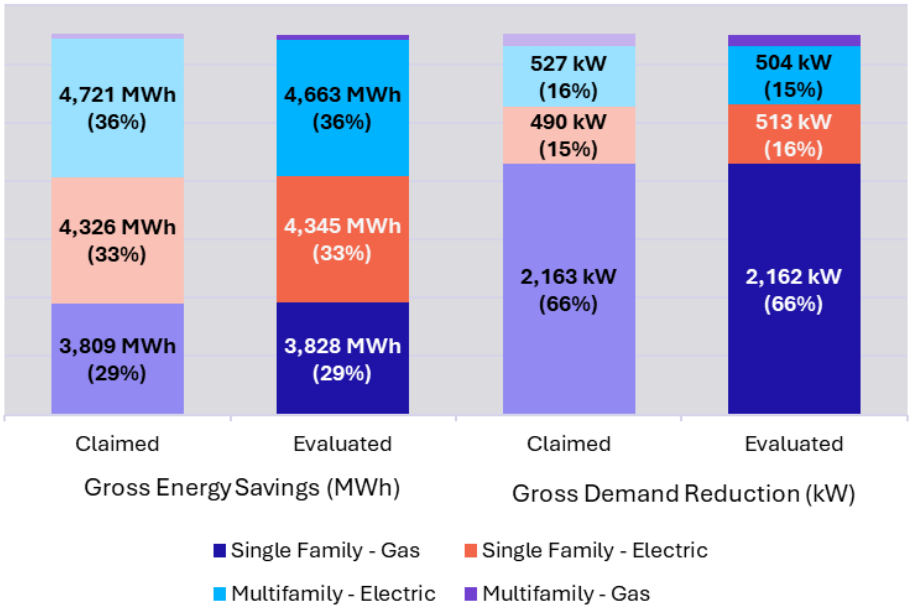
Table 4-5 WRAP Demand Reduction Summary by Stratum

Stratum	No. of Homes	Sample Size	Gross Demand Reduction (kW)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Single Family – Gas	1,998	12	2,163	2,162	100%	66	3.07%
Single Family – Electric	511	12	490	513	105%	7	1.44%
Multifamily – Electric	711	12	527	504	95%	5	0.94%
Multifamily – Gas	114	12	107	105	98%	0	0.19%
Total	**3,334**	**48**	**3,288**	**3,284**	**100%**	**67**	**2.04%**

Figure 4-2 shows the GWh savings and MW savings by stratum to illustrate the strata distribution on the overall program.

- The *Single Family – Electric* stratum comprises 15% of total serviced homes but makes up 33% of the electric energy savings.
- The *Single Family – Gas* stratum makes up 66% of the total demand reduction due to the high proportion of cooling in the population and the stratum's large nominal size.

Figure 4-2 WRAP Claimed and Evaluated Savings by Stratum



Measure-Level Findings. For evaluation activities that use a sampling approach, we expanded the sample at the stratum level rather than the measure level. As such, we do not officially calculate savings at the measure level, but we can still provide measure-level findings.

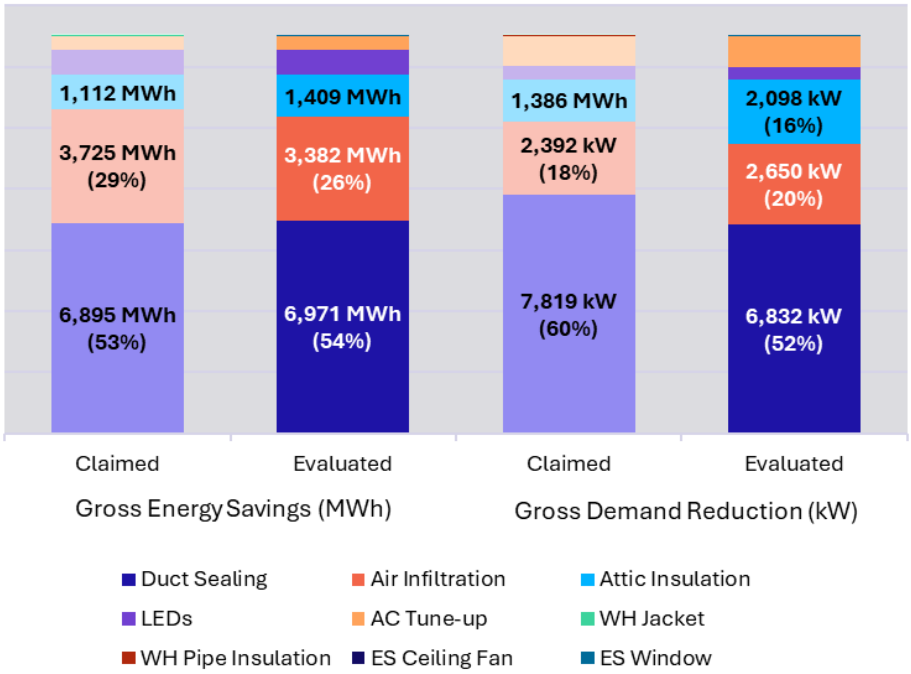
Table 4-6 shows extrapolated findings summarized by measure. Note that carbon monoxide and smoke detectors do not have claimed or evaluated savings and are excluded from the table.

Table 4-6 WRAP Savings Summary by Measure

Measure	No. of Homes	Gross Energy Savings (kWh)			Gross Demand Reduction (kW)		
		Claimed	Evaluated	RR	Claimed	Evaluated	RR
AC Tune-up	532	428,950	426,321	99%	249	254	102%
Air Infiltration	3,295	3,725,427	3,381,873	91%	603	668	111%
Attic Insulation	1,213	1,111,645	1,408,936	127%	349	529	151%
Duct Sealing	3,114	6,894,867	6,971,444	101%	1,970	1,723	87%
ENERGY STAR Ceiling Fan	6	1,832	1,869	102%	< 1	< 1	103%
ENERGY STAR Window	11	7,732	7,815	101%	4	4	102%
LEDs	2,569	847,327	814,640	96%	109	105	96%
Water Heater Jacket	78	20,567	369	2%	2	0	2%
Water Heater Pipe Insulation	141	7,764	10,196	131%	1	1	131%
Total	**3,334**	**13,046,111**	**13,023,462**	**100%**	**3,288**	**3,284**	**100%**

Figure 4-3 shows the GWh savings and MW savings by measure. Air infiltration, duct sealing, LEDs, and attic insulation made up 96% of evaluated energy savings and demand savings. These measures' realization rates inherently drive the overall realization rate.

Figure 4-3 WRAP Claimed and Evaluated Savings by Measure



- **Duct sealing.** Verified demand reduction fell short of claimed demand reductions by 13%. While it is not immediately clear why, AEG suspects that the coincidence factor (0.87) was not applied to claimed savings, which would decrease claimed demand by 13%.
- **Air infiltration and attic insulation.** AEG used the current version of the AR TRM (V9). Savings are modeled on a per-square-foot basis, and the TRM update caused the change. Air infiltration and attic insulation had different realization rates (91% and 127% for energy, respectively), but the specific measure distribution in the program resulted in slightly lower evaluated savings.
- **Water heater pipe insulation.** Although water heater pipe insulation makes up less than 1% of claimed savings, it had a high realization rate (131%). This measure had major methodological changes from AR TRM V6 to AR TRM V9.1.

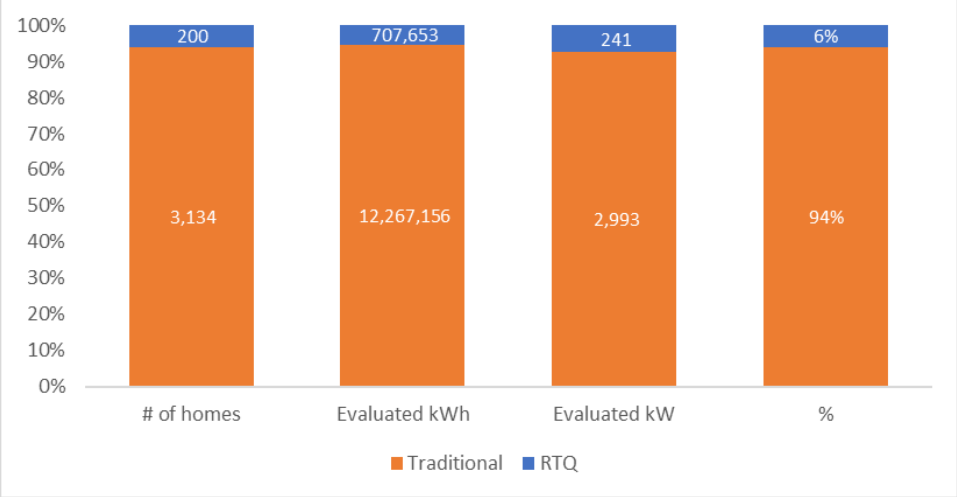
Finally, Table 4-7 shows each measure's lifetime kWh savings. Using EULs from the AR TRM V9.1, we found that duct sealing, air infiltration, and attic insulation measures are the most significant contributors to net lifetime savings.

Table 4-7 WRAP Net Lifetime Savings Summary by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
AC Tune-up	5	2,131,603
Air Infiltration	11	37,200,603
Attic Insulation	20	28,178,713
Duct Sealing	18	125,485,991
ENERGY STAR Ceiling Fan	10	18,689
ENERGY STAR Window	20	156,294
LEDs	12	10,183,003
Water Heater Jacket	13	4,793
Water Heater Pipe Insulation	13	132,548
Total	**15.6**	**203,492,236**

Repair-to-Qualify Initiative. The Repair-to-Qualify (RTQ) Initiative covers the cost of minor repairs to customers' homes that would otherwise disqualify them from the program. After receiving the required repairs, customers become eligible to participate in WRAP. Figure 4-4 shows the RTQ Initiative's contribution to the overall program performance in 2023.

Figure 4-4 WRAP Repair-to-Qualify Initiative – 2023 Performance



The RTQ Initiative added 200 homes to the program and 707,653 kWh and 241 kW in additional evaluated energy and demand savings.

WRAP – Process Evaluation

Evaluation Approach. Table 4-8 summarizes the process evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

Table 4-8 WRAP Process Evaluation Activities

Program	Program Manager Interview	Implementer Interview	Trade Ally Survey/ Interview	Participant Survey/ Interview[7]	Cycle Time Analysis
WRAP	✓	✓			

The focus of the process evaluation activities was to understand operations, assess overall effectiveness, and identify areas for improvement. We performed the following activities:

- AEG conducted separate comprehensive **interviews with the OG&E program manager and Skyline's program manager** to gather impressions of the program's implementation activities, performance, delivery issues, and opportunities for improvement.

Program Performance. WRAP claimed savings increased from 2022 by 13% while demand savings increased by 6%, as shown in Table 4-9.

Table 4-9 WRAP Claimed Savings – PY2022 v. PY2023

Claimed Savings	PY2022	PY2023	% Diff.
Energy (kWh)	11,525,832	13,046,111	13%
Demand (kW)	3,092	3,288	6%

Channel Operations. The WRAP program conducts assessments and installs energy-efficient measures for income-qualified customers at no cost. OG&E markets the program through mail, bill inserts, email blasts, and social media. Interested customers call OG&E's customer service center or sign up online, which kicks off the WRAP participation process described in the box to the right. Skyline enters data collected into EnerTrek, a demand side management (DSM) program tracking software system. In PY2023 WRAP added AC tune-ups as a measure and participation has increased as a result.

WRAP Customer Participation Process

- Customer contacts OG&E or signs up online.
- Skyline contacts customer to prequalify home.
- Skyline conducts energy assessment of qualified homes.
- Skyline provides customer with measure recommendations.
- Trade Ally installs measures at no charge to customer.
- Customer receives 12-month to-do list of energy saving tips/habits.

Program Challenges. The implementer identified two primary barriers to customer participation:

- **Overlap with RSOL.** According to the program manager, there have been situations where the RSOL channel and WRAP are providing services to the same home. This can be confusing for customers.
- **Lower participation rates.** At the time AEG interviewed OG&E and Skyline the program was 10% behind its participation goal. The program ended up meeting its energy goal but falling short of its demand goal.

WRAP staff would like to address these barriers by developing separate customer lists for HEEP and WRAP. They also began doing community marketing which resulted in an uptick in their numbers with the added benefit of servicing customers more efficiently.

Program Successes. The RTQ initiative, which covers the cost of minor repairs to customers' homes that would otherwise disqualify them from the program, has been very successful. The initiative is reaching a lot of people that were ineligible in the past. According to Skyline more than 500 homes received services that would not have been eligible.

[7] Under a separate engagement in 2022, AEG conducted a market evaluation that included surveys with nonparticipants. For that reason, we did not conduct additional nonparticipant surveys. AEG will work with OG&E to identify if nonparticipant surveys are necessary for the PY2024 evaluation.

Program Opportunities. The OG&E and Skyline program managers would like to add a DR component to the program, either through water heaters or smart thermostat controls.

5 | COMMERCIAL ENERGY EFFICIENCY PROGRAM (CEEP)

The Commercial Energy Efficiency Program (CEEP) is an umbrella-style program approach designed to address the needs of OG&E's commercial and industrial customer base. Specifically, the program provides a variety of participation channels for all Commercial and Industrial (C&I) customers to participate through targeted paths that address various unique participation barriers and technology challenges. CEEP consists of eight delivery channels:

- Commercial and Industrial Solutions (CIS)
  - C&I Assessments – Retro-commissioning & Express Building Tune-Ups (RCx & EBTU)
  - Network Lighting Controls (NLCs)
- Schools and Government Efficiency (SAGE)
- Small Business Direct Install (SBDI)
- Small Business Midstream (Midstream)
- HVAC Replacement and Tune-Up (C&I HVAC)
- Continuous Energy Improvement (CEI)

We provide detailed descriptions of each channel in each corresponding subsection. Note that we evaluated RCx & EBTU and NLCs projects within CIS as custom measures.

CEEP – Key Evaluation Findings and Recommendations

The impact evaluation established CEEP evaluated gross energy savings of 132,400,313 kWh and evaluated gross demand savings of 20,425 kW, which amount to realization rates of 99% and 102%, respectively. CEEP achieved 108% of its net energy savings goals and 79% of its net demand reduction goals.

Table 5-1 provides a summary of the CEEP impact evaluation findings.

Table 5-1 CEEP Impact Evaluation Summary

Savings	Gross Savings			Net Savings				
	Claimed	Evaluated	RR	Goal	Evaluated	% of Goal	NTG	Lifetime
Energy (kWh)	133,284,741	132,400,113	99%	118,444,383	127,658,392	108%	96%	1,126,254,711
Demand (kW)	20,122	20,425	102%	24,318	19,118	79%	94%	n/a

Table 5-2 and Table 5-3 provide the corresponding channel-level summaries of the evaluated energy and demand savings.

Table 5-2 CEEP Energy Savings by Channel

Channel	Gross Energy Savings (kWh)			Net Energy Savings (kWh)		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
C&I HVAC	7,240,034	7,153,774	99%	6,152,245	86%	30,761,226
CEI	30,334,751	30,334,751	100%	30,334,751	100%	30,334,751
CIS	50,483,966	50,842,862	101%	50,842,862	100%	529,974,820
Midstream	31,307,767	31,168,269	100%	27,428,077	88%	378,936,465
SAGE	5,537,850	5,262,661	95%	5,262,661	100%	75,622,814
SBDI	8,380,373	7,637,796	91%	7,637,796	100%	80,624,635
Total CEEP	**133,284,741**	**132,400,113**	**99%**	**127,658,392**	**96%**	**1,126,254,711**

Table 5-3 CEEP Demand Reduction by Channel

Channel	Gross Demand Reduction (kW)			Net Demand Reduction (kW)	
	Claimed	Evaluated	RR	Evaluated	NTG
C&I HVAC	3,966	3,974	100%	3,418	86%
CEI	4,350	4,350	100%	4,350	100%
CIS	5,241	5,644	108%	5,475	97%
Midstream	4,850	4,845	100%	4,264	88%
SAGE	889	808	91%	808	100%
SBDI	827	804	97%	804	100%
Total CEEP	**20,122**	**20,425**	**102%**	**19,118**	**94%**

Figure 5-1 and Figure 5-2 show the CEEP channel distribution of energy savings and demand reductions, respectively. Notably, CIS, Midstream, and CEI contributed the most to CEEP evaluated energy savings (85%) and demand reductions (74%).

Figure 5-1 CEEP Energy Savings Summary

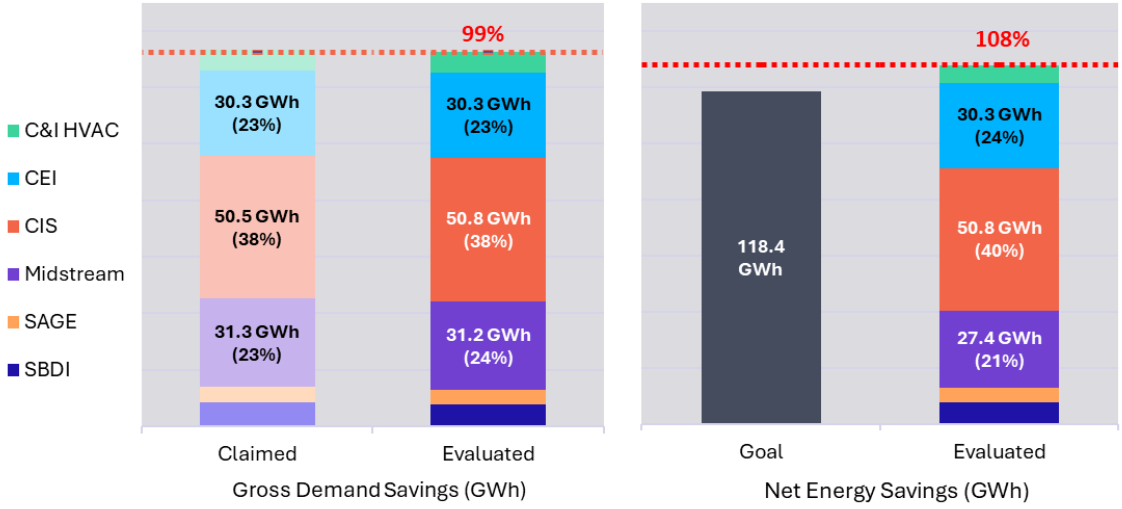
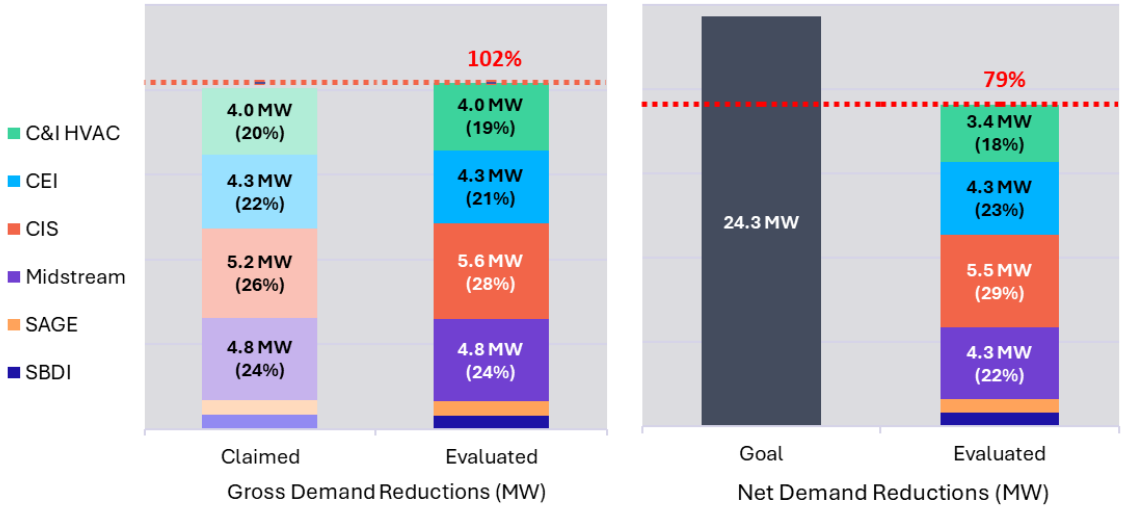


Figure 5-2 CEEP Demand Reduction Summary



The evaluation key findings and recommendations for the CEEP program are discussed below. We provide further detail for each CEEP delivery channel in the corresponding channel subsections.

All CEEP channels are performing at a high level. Realization rates are high, and the channel surpassed its energy savings goals. However, in some instances more transparency is needed in how savings are calculated. **There is opportunity for improvement and clarity in program processes.** CIS Trade Allies would like to better understand how savings are calculated. For SAGE, both CLEAResult and Trade Allies could benefit by better understanding of how the channel's online portal is used, how it was designed, and how it could be improved.

Recommendations:

- Provide all algorithms and inputs used for calculating savings, especially for stand-alone dehumidifiers, variable frequency drives (VFDs), and DI weatherstripping.
- Meet with SAGE Trade Allies to better understand how they use the portal and where their pain points are.

LED lighting continues to make up the majority of CEEP savings. While there is considerable opportunity for commercial lighting, more comprehensive projects will help maintain current savings levels.

Recommendations:

- Explore opportunities for additional measures for schools (such as lighting controls, weatherstripping and custom measures) and for Midstream.

Indoor agriculture continues to grow. This segment is responsible for much of the CIS channel's increased energy savings.

Recommendations:

- Consider designing and delivering a channel designated to horticultural lighting channel that would allow implementation staff to devote time to training in this area and to be proactive in working with this segment of customers.

Several channels could benefit from expanded marketing and outreach. Opportunities may exist for SBDI in specific segments such as grocery stores. There is currently only one participating restaurant distributor in Midstream, and it represents less than 1% of the savings. C&I HVAC should continue to try and expand into rural, underserved areas.

Recommendations:

- SBDI: Creating segment specific marketing collateral.
- Midstream: Recruit additional restaurant supply distributors.
- C&I HVAC: Recruit and incentivize Trade Allies that are willing to service rural customers.

CEEP – Evaluation Methods

Impact Evaluation Approach. Table 5-4 summarizes the impact evaluation activities conducted to determine evaluated savings.

- AEG conducted savings replication for all channels in which the reported data made it possible.
- Verification included site visits for all custom projects and the largest prescriptive projects. AEG conducted online surveys for all others.
- We used the 2021 NTG adjustments for all channels except C&I HVAC to estimate 2023 net evaluated savings. A NTG update survey was conducted in 2022 for C&I HVAC and is applied to the 2023 net evaluated savings. Since the sample size for the C&I HVAC NTG analysis was small, we repeated it again for the 2023 program year. We also conducted a NTG update survey (alongside the participant survey) for the C&I Solutions, SAGE, and Midstream channels.

We include detailed descriptions of each activity in Appendix A.

Table 5-4 CEEP Impact Evaluation Activities

Channel	Savings Replication	Desk Review	Savings Verification	NTG Ratio Update	Benefit-Cost Analysis
C&I Solutions		✓	✓+	✓	✓
SAGE		✓	✓+	✓	✓
SBDI		✓	✓+		✓
Midstream	✓	✓	✓	✓	✓
CEI		✓			✓
C&I HVAC	✓	✓	✓+	✓	✓

+ site visits were performed for additional verification

AEG used a stratified random sample for desk reviews and savings verification. We generally stratified participation by channel, claimed savings, and measure category. We also defined the sample frame unit as a project. We include detailed descriptions of the sample design in Appendix B.

Process Evaluation Approach. Table 5-5 summarizes the process evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

Table 5-5 CEEP Process Evaluation Activities

Channel	Program Manager Interview	Implementer Interview	Trade Ally Survey/ Interview	Participant Survey/Interview[8]	Cycle Time Analysis
C&I HVAC	✓	✓	✓		✓
CEI	✓	✓			
CIS	✓	✓	✓	✓	✓
Midstream	✓	✓	✓	✓	
SAGE	✓	✓	✓	✓	✓
SBDI	✓	✓	✓		✓

AEG designed the process evaluation to examine both internal program processes and participant response to CEEP. The focus of the process evaluation activities was to understand operations, assess overall effectiveness, and identify areas for improvement. We performed the following activities:

- AEG conducted separate, comprehensive **interviews with the OG&E program manager, the appropriate channel implementer, and participating Trade Allies** to gather their impressions of the program/channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- AEG administered **participant surveys and interviews** for CIS, SAGE, and Midstream. AEG conducts participant surveys for each channel once during the 3-year program cycle.

Commercial and Industrial Solutions (CIS)

The CIS channel primarily targets customers with single sites with a demand of over 150 kW or multiple sites with a combined demand over 250 kW. The channel offers in-person and virtual assessments paired with direct installation of low-cost EE measures plus a prescriptive and custom path to encourage the adoption of additional measures.

- The **prescriptive path** provides inducements based on the deemed energy savings achieved with the measures installed. Inducements are performance-based and start at $0.09 per kWh saved, depending on the measure type. Projects under the prescriptive path have an inducement cap of 50% of the project cost.
- The **custom path** allows participants to achieve their specific EE goals by proposing measures and projects that may be outside of the deemed measure list. Proposed measures are evaluated for savings and costs, and the inducement is approved if the project is considered cost-effective. Performance-based inducements are $0.11 per kWh saved and have an inducement cap of 70% of the total project cost.

We evaluated RCx & EBTU and NLCs projects within CIS as custom measures.

CIS – Key Evaluation Findings

The **impact evaluation** established CIS evaluated gross energy savings of 50,842,862 kWh and evaluated gross demand savings of 5,644 kW, which amount to realization rates of 101% and 108%, respectively. Table 5-6 summarizes the CIS impact evaluation findings and includes savings from the prescriptive and custom paths.

[8] Under a separate engagement in 2022, AEG conducted a market evaluation that included surveys with nonparticipants. For that reason, we did not conduct additional nonparticipant surveys. AEG will work with OG&E to identify if nonparticipant surveys are necessary for the PY2024 evaluation.

Table 5-6 CIS Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	50,483,966	50,842,862	101%	50,842,862	100%	529,974,820
Demand (kW)	5,241	5,644	108%	5,475	97%	n/a

The **impact evaluation** resulted in the following key findings:

- For sampled desk review and site visit projects, **AEG found that the tracking database and documentation were generally consistent** and only made small changes to energy savings based on minor observed or recorded differences in project characteristics. The types of changes made are common for desk reviews and site visits, such as updating quantities to account for LEDs placed into storage, changing LED wattages according to spec sheets or DLC data, and adjusting annual hours of use based on the customer's hours of operation.
- **Claimed savings for direct-install (DI) weatherstripping**, as stipulated by the South Direct Install Calculator, **do not correspond with deemed savings values provided to AEG by CLEAResult.** These differences resulted in lower evaluated savings compared to claimed, consistently and proportionally for desk-reviewed projects by Oklahoma metropolitan area.

The **process evaluation** resulted in the following key findings:

- OG&E **account executives (AEs) engaging customers** has been a key to the channel's success. More than half of the customers surveyed had participated in an OG&E program in the past.
- **Trade Allies are very satisfied** with the channel and have a positive relationship with the program implementer (that has improved over time). The channel has established strong partnerships between the implementer and Trade Allies. Trade Allies help customers really understand the value of the program.
- The **indoor agriculture market is growing**, and they are seeing lots of expansion in this area. The implementer attributes most of the channel growth to horticultural lighting.
- OG&E's program manager feels there is **still significant opportunities for lighting** in this sector.
- Trade Allies expressed concern about **lower incentives next year,** saying it is "going to make a lot of projects non-viable." They also suggested raising the price caps (currently 50% of prescriptive project costs and 70% of custom project costs).
- Participants are **overall very satisfied** with the channel.

CIS – Recommendations

The **impact evaluation recommendations** are as follows:

- **Review, compare, and verify per-unit energy savings assumptions for DI weatherstripping.** Claimed savings for weatherstripping, derived from the South Direct Install Calculator (provided as documentation for projects sampled for desk review), consistently and proportionately exceeded deemed savings values provided to AEG by CLEAResult.

The **process evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * Continue to **increase program awareness** by **working with AEs**, marketing to trade associations, and conducting mass marketing about non-lighting measures.
- Consider a **horticultural-specific channel**. Indoor agriculture is responsible for much of the channel's growth. A channel specific to this area would allow implementation staff time to devote to training in this area and allow them to be proactive in working with this segment of customers.
- Conduct benchmarking to review **upcoming price caps and incentives**, particularly relative to other utilities.

- Provide **more transparency** into how **savings are calculated**. Some Trade Allies expressed frustration with understanding how savings are determined for customer's projects.
- **Work to decrease the time from installation to payment.** More than a quarter of projects took 60 days or longer to receive their incentive.
    - Offering direct deposit to Trade Allies could help shorten the payment time.

CIS – Impact Evaluation

Evaluation Approach. Table 5-4 (page 8080) summarizes the impact evaluation activities conducted on CIS to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

- AEG conducted **desk reviews** and completed site visits for custom projects and the largest prescriptive projects for **savings verification**.
- AEG used the PY2021 NTG ratio to derive PY2023 net savings. AEG conducted an NTG update analysis in conjunction with the process participant survey to update the NTG ratio for PY2024.

AEG used a stratified random sample for desk reviews and savings verification. We defined the sample frame unit as one project and stratified the CIS participant population (as shown in Table 5-7 below) using the following criteria:

- **Path (i.e., custom or prescriptive)**, which stratifies projects by evaluation methodology. Custom projects use custom calculations while prescriptive projects use deemed savings from the AR TRM.
- **Measure Type**, which stratifies projects by measure, ensuring that sampled findings logically extrapolate to the population.
- **Project size**, which stratifies projects by claimed savings size, minimizing the variation of our sample-extrapolated estimates. An average historical savings threshold determines the Top 5% strata. For custom projects, we included all projects, regardless of measure type, that met the threshold.

We include detailed descriptions of the sample design in Appendix B.

Table 5-7 CIS Stratification

Path	Stratum	No. of Projects	Sample Size
Custom	Custom – Top 5%	5	4
	Custom – Horticultural Lighting	77	7
	Custom – All Others[9]	25	6
Prescriptive	Prescriptive – Lighting – Top 5%	4	4
	Prescriptive – Lighting – All Others	772	196
	Prescriptive – Non-Lighting	45	45

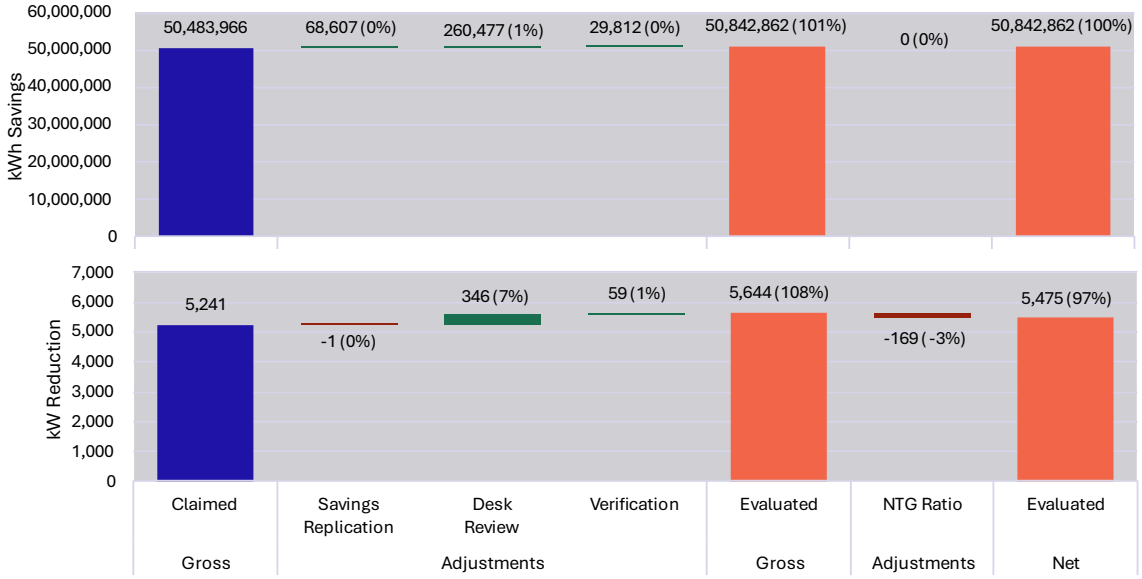
We present the impact evaluation findings as follows:

- Evaluation adjustments from each activity,
- Stratum-level findings, including confidence and precision, and
- Measure-level findings.

Evaluation Adjustments. Figure 5-3 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

[9] *Custom – All Others* include retro commissioning, VFDs, chiller upgrades, HVAC upgrades, compressed air projects and injection molding machine upgrades.

Figure 5-3 CIS Summary of Adjustments by Activity



- **Desk Review.** AEG applied adjustments to many projects in our sample. The typically minor adjustments are as follows:
  - **DI weatherstripping.** Claimed savings for weatherstripping consistently and proportionately exceeded deemed savings values provided to AEG by CLEAResult. This resulted in lower evaluated savings.
  - **Horticultural lighting.** For some projects, the claimed wattages did not match product spec sheets, and dimming schedules were not correctly accounted for in the provided calculators. Some calculation errors stemming from using incorrect inputs were also identified in the calculators. Correcting these errors typically increased savings.
  - **Dehumidifier.** AEG accepted CLEAResult's savings methodology for this measure. While energy savings were unchanged, AEG's review resulted in an increase in demand savings for two projects after correcting errors in CLEAResult's original calculations.
  - **VFDs.** The contractor used an outside program to determine savings for these projects, so AEG could not fully recreate their results. Estimates came close to reported, but RRs were not exact.
  - **Compressed air.** On one of the projects, the contractor calculation used an equation based on psi from an unknown source. AEG arrived at higher savings after calculating savings based on AR TRM equations.
  - **New Construction lighting.** AEG adjusted efficient wattages slightly to conform with DLC data.
  - **Retrofit lighting.** For several projects AEG adjusted efficient wattages to conform with DLC data and changed facility types and the associated hours of use to match project documentation.
- **Savings Verification.** AEG conducted site visits for 18 custom projects and all *Prescriptive – Lighting – Top 5%* projects. We conducted desk reviews and online surveys for other projects.
  - **Horticultural lighting.** AEG found that many project site visits did not match the number of fixtures and/or type of fixtures provided for the desk reviews. Some projects did not match room types or dimming schedules provided at the desk review stage, changing the hours of use.
  - **VFDs.** The projects were found to have different hours of use than were reported for desk reviews. This decreased the savings.
  - **Dehumidifier.** Site visits found some projects had differing amounts and types of dehumidifiers installed than were reported.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2021 evaluation.

Stratum-Level Findings. Table 5-8 and Table 5-9 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and CIS overall. At the channel level, the impact evaluation findings are at 17.7% precision (kWh) and 10.4% precision (kW) at the 90% confidence level. Precision lower than expected was driven by horticultural lighting. The sample design will be updated in the PY2024 evaluation to allow for additional desk reviews and site visits for that stratum.

Table 5-8 CIS Evaluated Energy Savings by Stratum

Stratum	No. of Projects	Gross Energy Savings (kWh)				90% Confidence	
		Sample	Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Custom – Top 5%	5	4	8,473,253	7,302,303	86%	982,188	13.45%
Custom – Horticultural Lighting	77	7	28,983,977	31,097,198	107%	8,938,932	28.75%
Custom – All Others	25	6	4,148,852	4,048,770	98%	166,805	4.12%
Prescriptive – Lighting – Top 5%	4	4	1,185,683	1,161,287	98%	0	0.00%
Prescriptive – Lighting – All Others	772	196	4,084,311	4,149,953	102%	40,727	0.98%
Prescriptive – Non-Lighting	45	45	3,607,890	3,083,351	85%	0	0.00%
Total	**928**	**263**	**50,483,966**	**50,842,862**	**101%**	**8,994,369**	**17.69%**

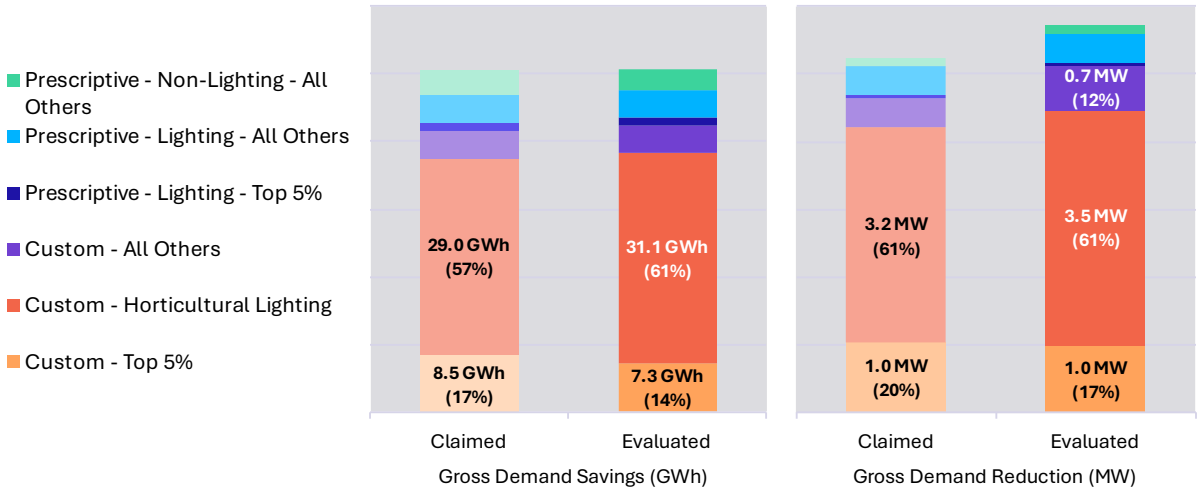
Table 5-9 CIS Evaluated Demand Reduction by Stratum

Stratum	No. of Projects	Gross Demand Reduction (kW)				90% Confidence	
		Sample	Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Custom – Top 5%	5	4	1,025	981	96%	186	19.00%
Custom – Horticultural Lighting	77	7	3,181	3,483	109%	389	11.17%
Custom – All Others	25	6	438	596	136%	286	48.06%
Prescriptive – Lighting – Top 5%	4	4	46	46	100%	0	0.00%
Prescriptive – Lighting – All Others	772	196	437	429	98%	8	1.77%
Prescriptive – Non-Lighting	45	45	115	110	95%	0	0.11%
Total	**928**	**263**	**5,241**	**5,644**	**108%**	**518**	**9.2%**

For the *Custom – All Other* stratum, the decreased energy savings was a result of one project where AEG conducted onsite verification and found a smaller number of dehumidifiers were installed relative to the reported number of units, and two fan VFD projects where AEG adjusted the operating hours used in the calculations based on findings from the onsite verification.

Figure 5-4 shows the CIS energy savings by stratum. Custom projects made up more than 80% of total evaluated energy savings.

Figure 5-4 CIS Claimed and Evaluated Savings by Stratum



Finally, Table 5-10 shows the EULs and lifetime savings by measure. EULs come from the AR TRM.

Table 5-10 CIS Net Lifetime Savings Summary by Measure

Path	Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
Custom	Top 5%	9.9	72,308,435
	Horticultural Lighting	9.9	307,928,864
	All Other	9.2	37,128,820
Prescriptive	Lighting – Top 5%	15.0	17,419,304
	Lighting – All Others	14.9	61,897,684
	Non-Lighting	10.8	33,291,713
Total		**10.4**	**529,974,820**

Net-to-Gross Analysis. As part of the participant survey, AEG assessed NTG ratios to be applied in PY2024. The resulting NTG ratio is roughly 2 percentage points higher (99%) than the ratio assessed in PY2021 (97%). AEG applied the PY2021 NTG ratio for this year's net savings.

The complete NTG methodology can be found in Appendix D.

CIS – Process Evaluation

Evaluation Approach. Table 5-5 (page 8181) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A. We performed the following activities:

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and CLEAResult manager** to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- AEG conducted **Trade Ally interviews** with three of six contractors that had completed projects in this channel.
- AEG administered an **online survey** to 113 customers who participated in the channel in PY2023. Nine participants completed the survey for a response rate of 8%. The survey covered topics such as awareness, motivation, and satisfaction, and AEG used results to estimate the CIS channel's NTG ratio.

Program Performance. Table 5-11 shows how the CIS performance has changed since 2022. Energy savings increased by 17% while demand savings decreased by 2%, compared to the previous program

year. CIS continues to be a leading contributor to CEEP, with 38% and 26% of overall energy and demand savings, respectively.

Table 5-11 CIS Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	Claimed	Share of CEEP	Claimed	Share of CEEP	PY2022 v. PY2023
Energy (kWh)	43,305,489	33%	50,483,966	38%	17%
Demand (kW)	5,363	24%	5,241	26%	-2%

Channel Operations. According to CLEAResult, much of the channel's growth was due to working closely with OG&E AEs to make the customers aware of the available incentives. Most of the marketing is done through one-on-one visits, although participating Trade Allies sometimes introduce customers to the channel. The implementer worked with OG&E to update its web page, and it worked with AEs and the community affairs manager to create marketing materials to hand out to prospective customers (e.g., one-pagers and pamphlets). They also hosted commercial specific outreach events with local tradespeople.

CIS Customer Participation Process

- Initial customer visit: program explained with a focus on reducing operating costs.
- Trade Ally conducts no-obligation no-cost audit.
- Project proposal, including available inducement, presented to customer.
- Customer signs participation agreement.
- Trade Ally submits program documentation through online portal.
- CLEAResult approves project, conducts pre-inspection.
- Trade Ally completes project.
- CLEAResult conducts post-inspection.
- Inducement paid to Trade Ally.

To approach customers, CLEAResult works with AEs, which are essential to connect with the largest key accounts. Coordination between CLEAResult and AEs has improved greatly over the last few years. The AEs have a better understanding of the benefits EE brings to customers. CLEAResult has a lot of support from OG&E management that has helped change the culture around communicating the value of EE to customers.

Lighting continues to make up a large portion of the channel savings. The implementer feels there continues to be opportunity for lighting in that sector. The implementer attributes most of the channel growth to horticulture lighting. With the indoor agriculture market growing, OG&E anticipates lots of expansion in this area. One Trade Ally mentioned that channel staff sometimes lack expertise in horticulture and cannabis, which indicates an opportunity for training.

Barriers to Participation. Many Trade Allies feel that identifying needed upgrades and completing the rebate application process is difficult for customers to navigate independently. Other minor program barriers include occasional issues with the online portal, customer concerns regarding having to sign a participation agreement, and delays in Trade Allies getting paid from the channel.
Trade Allies also spoke about incentives and price caps:

> *"It's a really bad idea to lower incentives next year. It's going to make a lot of projects non-viable. I would suggest raising the price caps – a 50% price cap is very low. Price caps punish customers who get better deals. It only benefits providers that charge more for their lights. The incentive should be based on the savings, not on how much customers pay for equipment."*

Channel Effectiveness. The Trade Allies interviewed feel strongly that inducements are very important in customers' final purchasing decisions.

> *"They are lowering the barrier to entry for these customers."*

> *"Once they've received a rebate, they will look for rebates in the future. Also, once they see the benefits of using efficient equipment, it's easy to see the long-term benefits."*

Trade Allies feel the channel is good for their business. Customers like it, and the channel does a good job of encouraging customers to replace equipment rather than repair it. All the Trade Allies interviewed have seen growth in their businesses that they attribute to OG&E programs. In fact, for one Trade Ally this is all the work that they do.

Channel Satisfaction. The Trade Allies interviewed are satisfied with the channel and spoke very highly of their relationship with CLEAResult despite personnel changes.

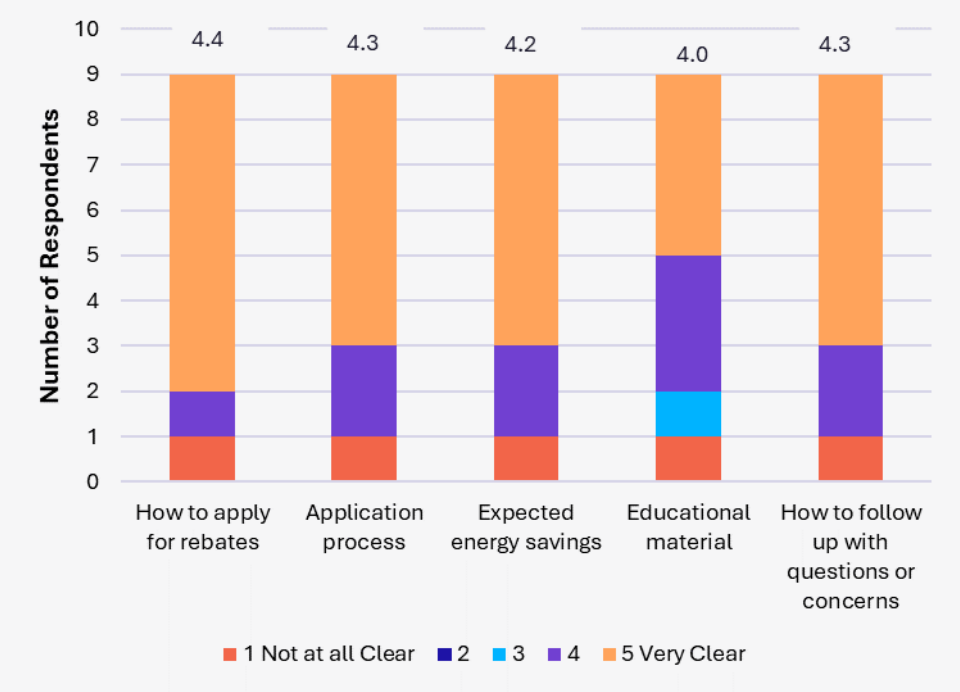
> *"The CLEAResult staff member has significantly impacted my business and is the reason why I chose to participate."*

Multiple Trade Allies spoke about a lack of transparency regarding incentive calculations, which are proprietary to CLEAResult. One Trade Ally said they found an error in CLEAResult's calculation which would have short-changed the customer's incentive by almost $30,000. A lack of clarity regarding incentive amounts makes it difficult for Trade Allies to induce participation.

> *"They don't share information with Trade Allies about their savings calculations. This is a problem because we can't accurately estimate incentives. It makes it more difficult to sell projects to customers."*

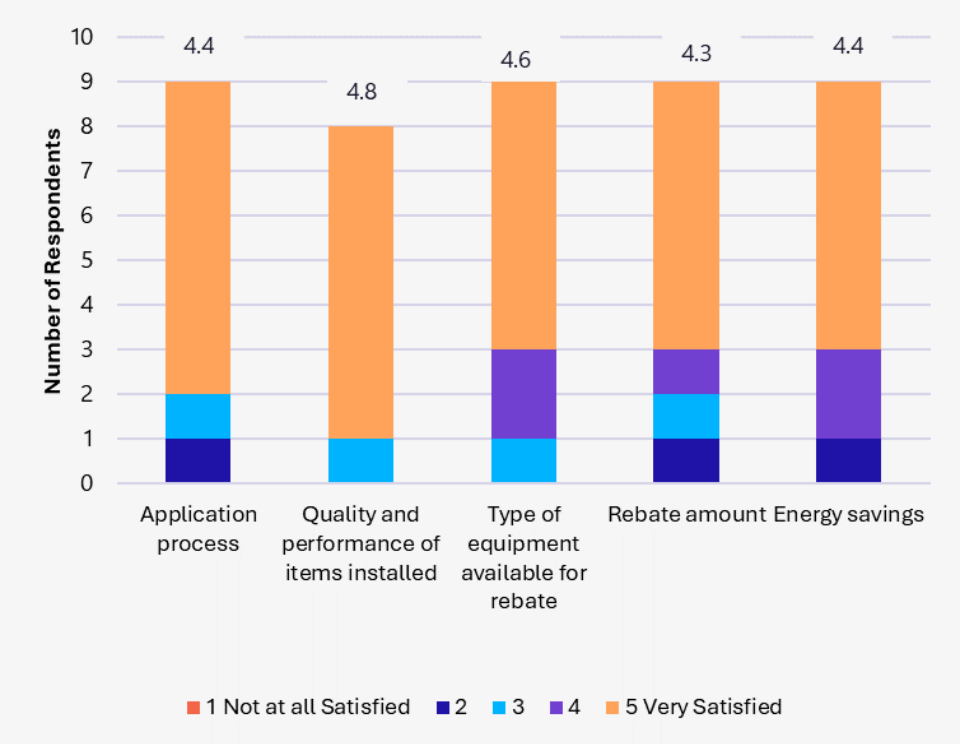
Among participants, those surveyed found the information provided to be very clear. They were more neutral about the educational material provided about how to save energy (Figure 5-5).

Figure 5-5 CIS Clarity of Information Provided to Participants (n = 9)



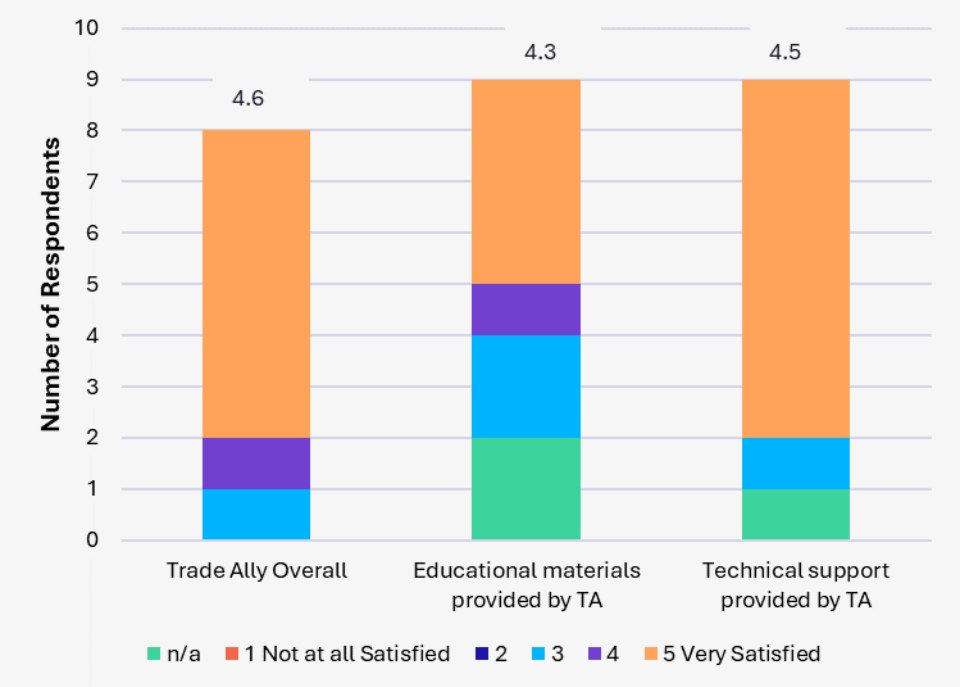
Most surveyed participants were very satisfied with the application process and the equipment installed. Participants expressed slightly lower satisfaction with the rebate amount and the energy savings achieved (Figure 5-6).

Figure 5-6 CIS Participant Satisfaction with Process and Equipment (n = 9)



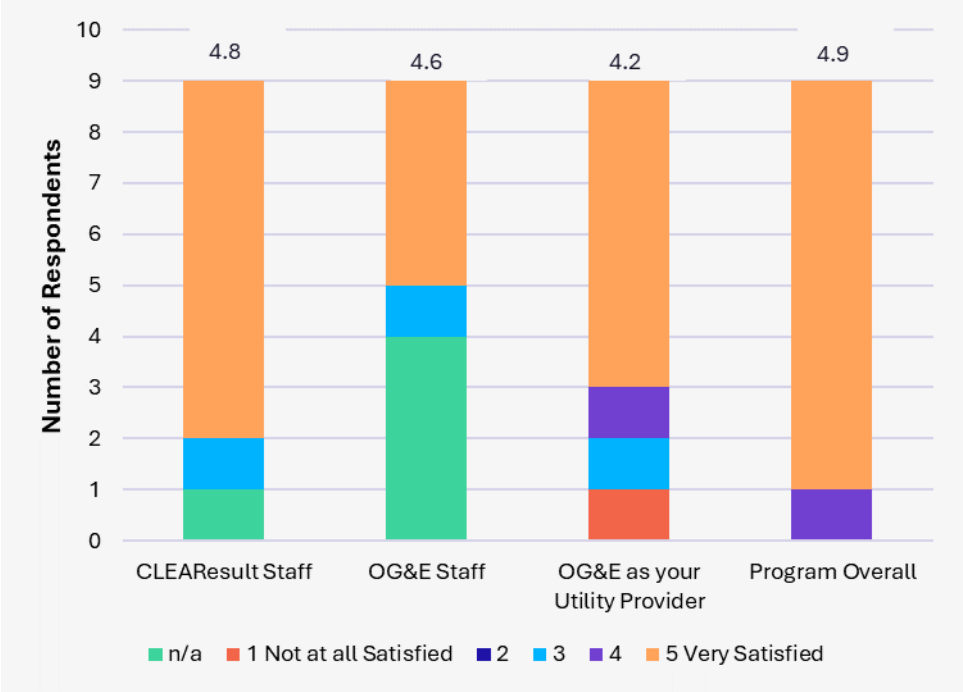
Most surveyed participants were very satisfied with the Trade Ally who installed their equipment overall and with the technical support provided. Results were slightly more mixed for the educational materials provided by the Trade Ally (Figure 5-7).

Figure 5-7 CIS Participant Satisfaction with the Trade Ally who Installed their Equipment (n = 9)



Respondents were also very satisfied with the channel overall and their interactions with CLEAResult staff. Four of the nine participants who responded to the survey had no interaction with OG&E staff, four were very satisfied and one was neutral. Six were very satisfied with OG&E as their utility provider (Figure 5-8).

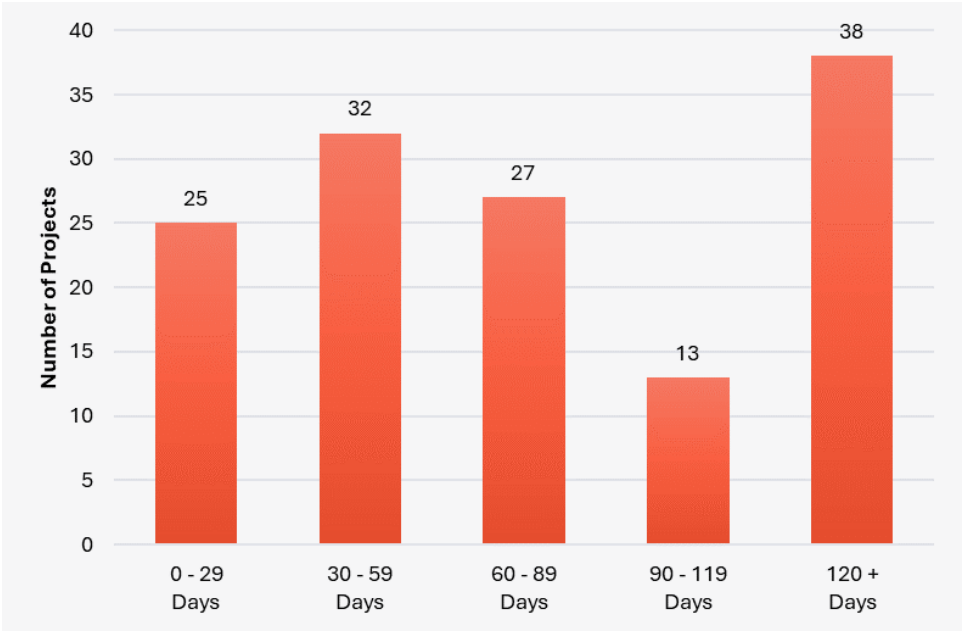
Figure 5-8 CIS Participant Satisfaction with OG&E and CLEAResult (n = 9)



Eight respondents said they would be very likely to recommend the channel.

Cycle Time Analysis. AEG conducted a cycle time analysis on 135 CIS projects with valid dates in the program tracking database to explore the time it takes from initial customer contact to measure installation to inducement distribution. The average number of days from enrollment to installation for the projects was 87 (down from 152 days last year). Figure 5-9 shows the time from enrollment to installation for CIS projects.

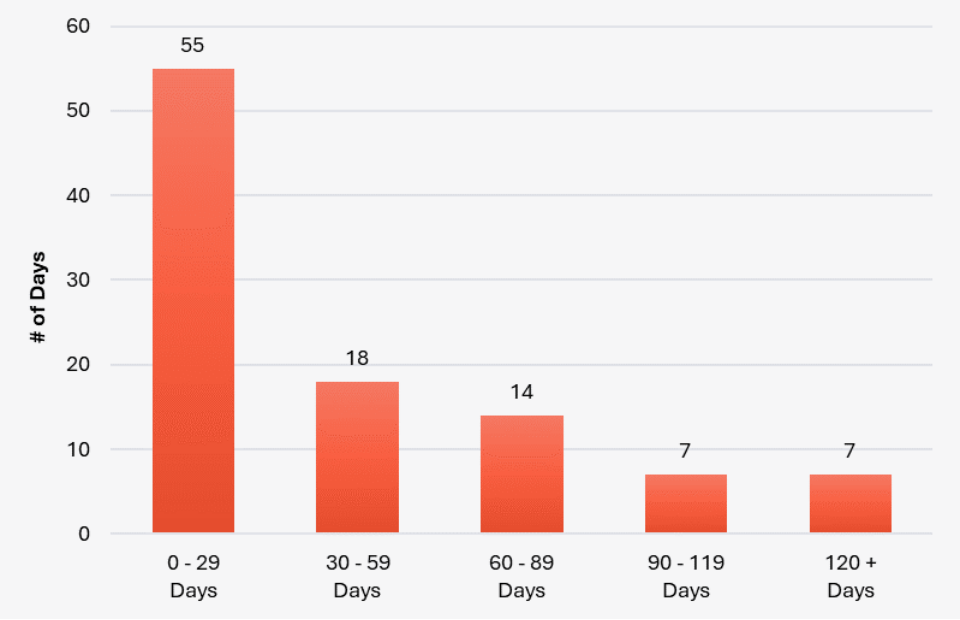
Figure 5-9 CIS Number of Days from Enrollment to Installation



Six of the nine participants surveyed said they were very satisfied with the wait time between inspection and installation.

Figure 5-10 shows the time from installation to payment for 101 CIS projects with valid dates in the program tracking database. The average number of days from installation for payment for the projects was 41 days (up from 31 days last year). Inducements were delivered within 30 days for more than half of projects, but 28% of projects took 60 days or longer.

Figure 5-10 CIS Number of Days from Installation to Payment



Schools and Government Efficiency (SAGE)

The SAGE channel offers EE inducements for educational and publicly funded facilities to overcome barriers to energy improvement that are unique to their market segment, such as conflicting organizational goals, outdated specifications, limited technical knowledge, and counterproductive energy budgeting. Performance-based inducements are $0.14 per kWh saved and have a cap of 90% of the total project cost.

SAGE – Key Evaluation Findings

The **impact evaluation** established SAGE evaluated gross energy savings of 5,262,661 kWh and evaluated gross demand savings of 808 kW, which amount to realization rates of 95% and 91%, respectively. Table 5-12 provides a summary of the SAGE impact evaluation findings.

Table 5-12 SAGE Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	5,537,850	5,262,661	95%	5,262,661	100%	75,622,814
Demand (kW)	889	808	91%	808	100%	n/a

The **impact evaluation** resulted in the following key findings:

- For sampled desk review and site visit projects, **AEG found that the tracking database and documentation were generally consistent** and only made small changes to energy savings based on minor observed or recorded differences in project characteristics. The types of changes we made are common for desk reviews and site visits, such as updating quantities to account for LEDs placed into storage, changing LED wattages according to spec sheets or DLC data, and adjusting annual hours of use based on the customer's hours of operation.

The **process evaluation** resulted in the following key findings:

- The percentage of projects completed in schools decreased from PY2022 to PY2023.
- **Trade Allies expressed concerns** with the SAGE portal and not giving schools credit for operating during the summer.

SAGE – Recommendations

The process evaluation recommendations are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * **Use actual IECC 2012 values as the baseline for unitary AC and HP equipment.** The AR TRM cites the IECC 2012 code but incorrectly reproduces the code within its calculations, resulting in inaccurate deemed savings values.

The **process evaluation recommendations** are as follows:

- Explore opportunities for **additional measures for schools** such as lighting controls, weatherstripping, and custom measures. Many schools have upgraded their lighting with the help of OG&E, but they could also benefit from other EE measures.
- Explore the possibility of **replacing old LED lighting with updated LEDs.** Many schools received lighting upgrades several years ago through SAGE, and since then LEDs have improved.
- **Meet with Trade Allies to discuss the portal and processes**. Both CLEAResult and Trade Allies could benefit by better understanding of how the portal is used, how it was designed, and how it could be improved.
- **Give schools credit for hours of operation during the summer** in savings calculations.
- * Consider a **rural community outreach approach**. If the implementer can line up projects in a few buildings in a town or neighboring areas, Trade Allies will be more likely to travel to service these customers.
- * Consider offering **enhanced inducements for trade allies serving rural areas** and/or reimbursement for travel. Some trade allies are reluctant to serve rural customers because of the increased travel time, and offering extra inducements or reimbursements could better

SAGE – Impact Evaluation

Evaluation Approach. Table 5-4 (page 8080) summarizes the impact evaluation activities conducted to determine evaluated savings.

- AEG conducted **desk reviews** and completed site visits for the largest prescriptive projects and online surveys for all other projects for **savings verification**.
- AEG used the PY2021 NTG ratio to derive PY2023 net savings. AEG conducted an NTG update analysis in conjunction with the process participant survey to update the NTG ratio for PY2024.

We include detailed descriptions of each activity in Appendix A.

AEG used a stratified random sample for desk reviews and savings verification. We defined the sampling unit as one project and stratified the SAGE participant population (as shown in Table 5-13) using the following criteria:

- **Measure type**, which stratifies projects by measure, ensuring that sampled findings logically extrapolate to the population.
- **Project size**, which stratifies projects by claimed savings size, minimizing the variation of our sample-extrapolated estimates. An average historical savings threshold determines the Top 5% stratum, for which we used a census sampling approach.

We include detailed descriptions of the sample design in Appendix B.

Table 5-13 SAGE Stratification

Stratum	No. of Projects	Sample Size
Lighting – Top 5%	2	2
Lighting – All Others	55	9
Non-Lighting	12	7
Total	**69**	**18**

Evaluation Adjustments. Figure 5-11 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 5-11 SAGE Summary of Adjustments by Activity

- **Desk Review.** Due to high quality of data and documentation and soundness of claimed savings calculations, AEG made few changes during desk reviews that resulted in small differences in evaluated savings.
- **Savings Verification.** AEG conducted site visits for all *Lighting – Top 5%* projects. We conducted online surveys for all other projects. We found that all claimed measures were installed during our site visits.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2021 evaluation.

Stratum-Level Findings. Table 5-14 and Table 5-15 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and SAGE overall. At the channel level, the impact evaluation findings are at 5.1% precision (kWh) and 6.3% precision (kW) at the 90% confidence level. The relative precision for both energy savings and demand reduction exceed the minimum industry standards of 10% at 90% confidence (i.e., 90/10).

Table 5-14 SAGE Evaluated Energy Savings by Stratum

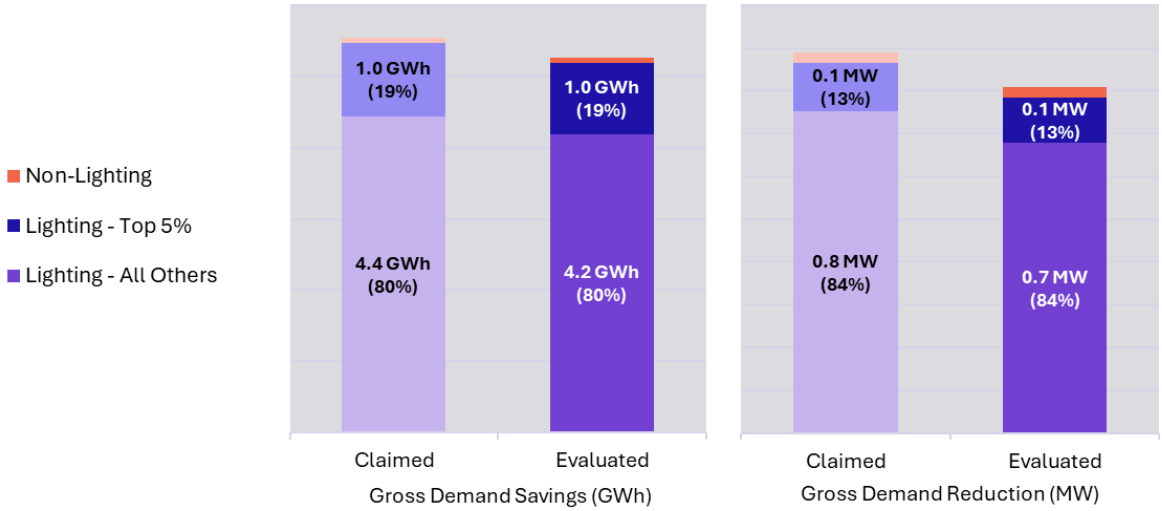
Stratum	No. of Projects	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Lighting – Top 5%	2	2	1,031,282	1,003,504	97%	0	0.00%
Lighting – All Others	55	9	4,436,292	4,187,467	94%	270,375	6.46%
Non-Lighting	12	7	70,276	71,689	102%	5,467	7.63%
Total	**69**	**18**	**5,537,850**	**5,262,661**	**95%**	**270,431**	**5.14%**

Table 5-15 SAGE Evaluated Demand Reduction by Stratum

Stratum	No. of Projects	Sample Size	Gross Demand Reduction (kW)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Lighting – Top 5%	2	2	113	106	94%	0	0.00%
Lighting – All Others	55	9	751	678	90%	50	7.43%
Non-Lighting	12	7	25	24	97%	4	14.71%
Total	**69**	**18**	**889**	**808**	**91%**	**51**	**6.25%**

Figure 5-12 shows the SAGE energy and demand savings distribution by stratum. Lighting projects comprise 99% of gross evaluated energy savings and 97% of evaluated demand reduction.

Figure 5-12 SAGE Claimed and Evaluated Savings by Stratum



Finally, Table 5-16 shows the net lifetime energy savings. Retrofit and new construction lighting combined for 99% of lifetime energy savings. EULs come from the AR TRM.

Table 5-16 SAGE Net Lifetime Energy Savings by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
Lighting - Top 5%	14	59,494,913
Lighting - All Others	15	15,052,567
Non-Lighting	15	1,075,335
Total	**14.4**	**75,622,814**

Net-to-Gross Analysis. As part of the participant survey, AEG assessed NTG ratios to be applied in PY2024. The resulting NTG ratio is roughly 1 percentage point lower (99%) than the ratio assessed in PY2021 (100%). AEG applied the PY2021 NTG ratio for this year's net savings.

A detailed description of the methodology can be found in Appendix D.

SAGE – Process Evaluation

Evaluation Approach. Table 5-5 (page 8181) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A. We performed the following activities:

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and CLEAResult manager** to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- AEG conducted a **Trade Ally interview** with one of the five contractors who completed projects in PY2023.
- AEG administered an **online survey** to the 50 customers who participated in the channel in PY2023. Nine participants completed the survey for a response rate of 18%. The survey covered topics such as awareness, motivation, and satisfaction, and AEG used results to estimate SAGE's prospective NTG ratio for PY2024.

Program Performance. Table 5-17 shows how SAGE performance has changed since PY2022. Energy savings and demand reduction decreased by 10% and 26%, respectively, compared to the previous program year.

Table 5-17 SAGE Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	Claimed	Share of CEEP	Claimed	Share of CEEP	PY2022 v. PY2023
Energy (kWh)	6,134,026	5%	5,537,850	4%	-10%
Demand (kW)	1,198	5%	889	4%	-26%

Channel Operations. The SAGE channel largely mirrors the CIS channel, with inducements set at a larger amount per kWh and a higher cap on total project costs. The target market for the channel is schools, local government buildings, and some non-profit organizations. In PY2023, 53% of the channel savings came from schools, which is a decrease from 72% in PY2022. Most savings come from lighting measures.

Barriers to Participation. Funding is a barrier to participation. For example, Oklahoma City Public Schools have taken a piecemeal approach to upgrades, such as only replacing hallway lighting one year, instead of upgrading the entire building. Although OG&E has helped a lot of K-12 schools make improvements, it thinks trade schools, colleges, and universities are underserved.

OG&E would also like to focus resources on the smaller, rural, schools in its service territory.

Channel Effectiveness. Only one SAGE Trade Ally was interviewed this year. They feel that customers are very satisfied with the channel, the rebates are very influential in the decision-making process, and the channel is good for their business.

SAGE Customer Participation Process

- Initial customer visit: program is explained with a focus on reducing operating costs.
- Trade Ally conducts no-obligation no-cost audits.
- Project proposal presented to customer including available inducement.
- Customer signs participation agreement.
- Trade Ally submits program documentation through the online portal.
- CLEAResult approves project, conducts pre-inspection. Projects under 50,000 kWh receive either a pre- or post-inspection, but not both.
- Trade Ally completes project.
- CLEAResult conducts post-inspection.

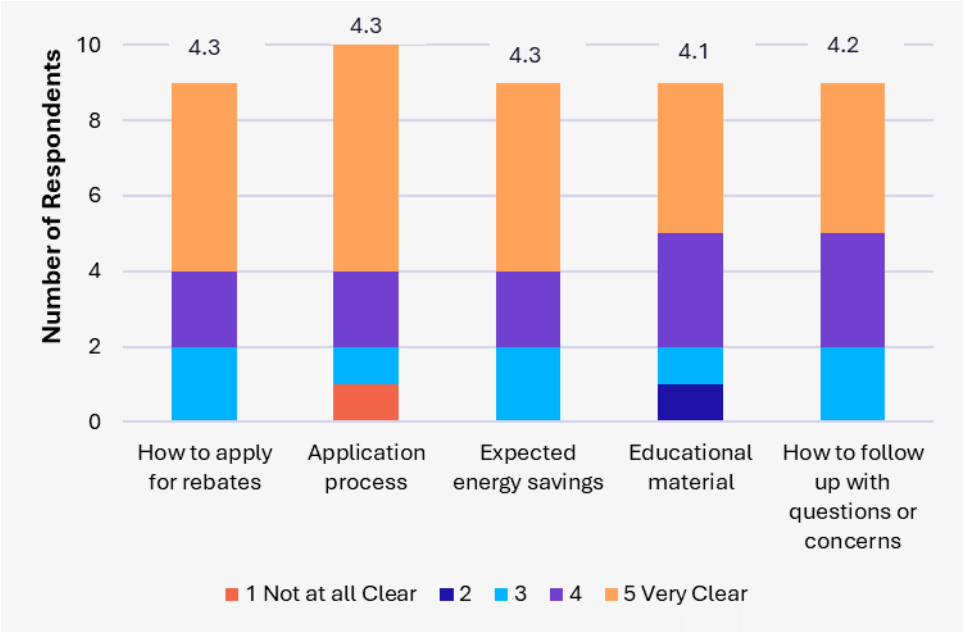
> *"For schools specifically, SAGE was huge for them to do these upgrades. You'll always have some customers who would do these upgrades anyway, but the majority of SAGE participants wouldn't. The incentive pushes them over the edge to be able to do these upgrades."*

Channel Satisfaction. The Trade Ally mentioned that a few school districts this year had an issue because OG&E would not honor the buildings hours of use. These schools operated during the summer, but those extended hours of use were not considered when calculating savings and the rebate.

The Trade Ally also said the SAGE portal needs a lot of work: it doesn't update well and documents that are submitted sometimes get lost.

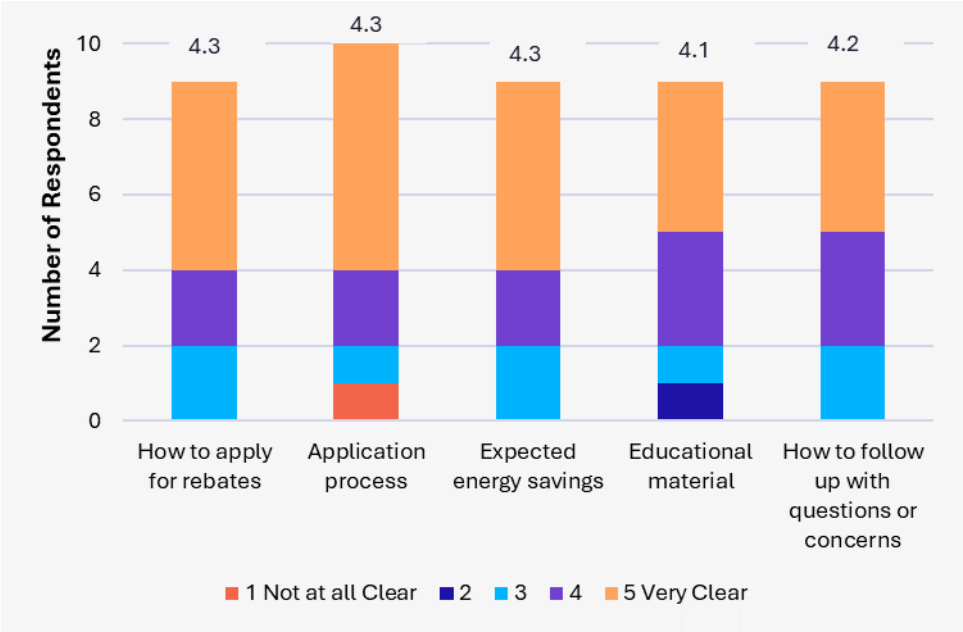
Respondents generally found the information provided to them to be clear. The educational material provided about how to save energy received the lowest clarity ratings from participants.

Figure 5-13 SAGE Clarity of Information Provided to Participants (n = 9)



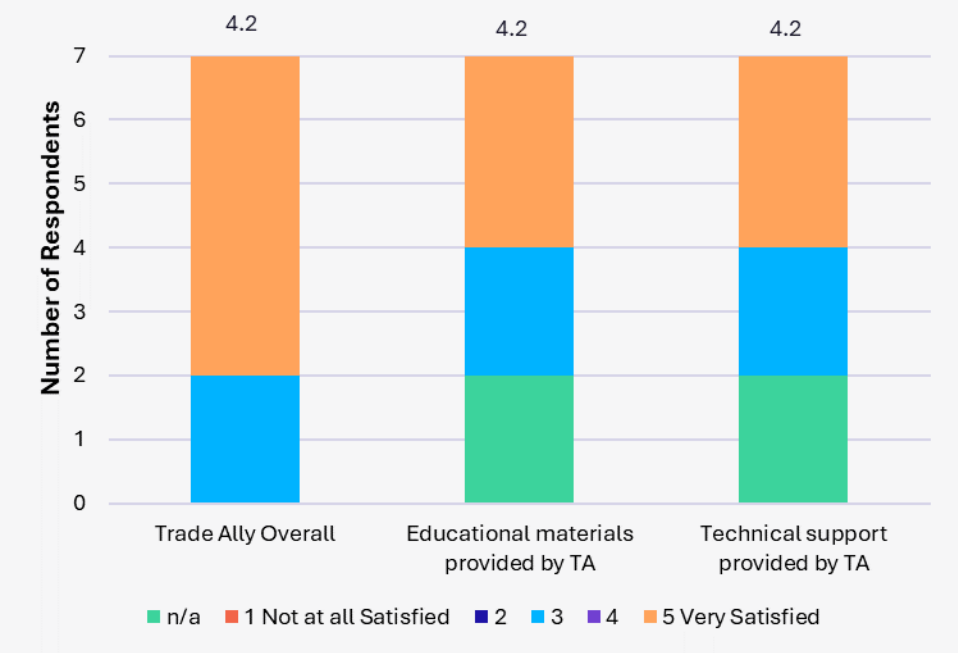
Most participants were neutral to very satisfied with the application process and the equipment installed (Figure 5-14).

Figure 5-14 SAGE Participant Satisfaction with Process and Equipment (n = 7)



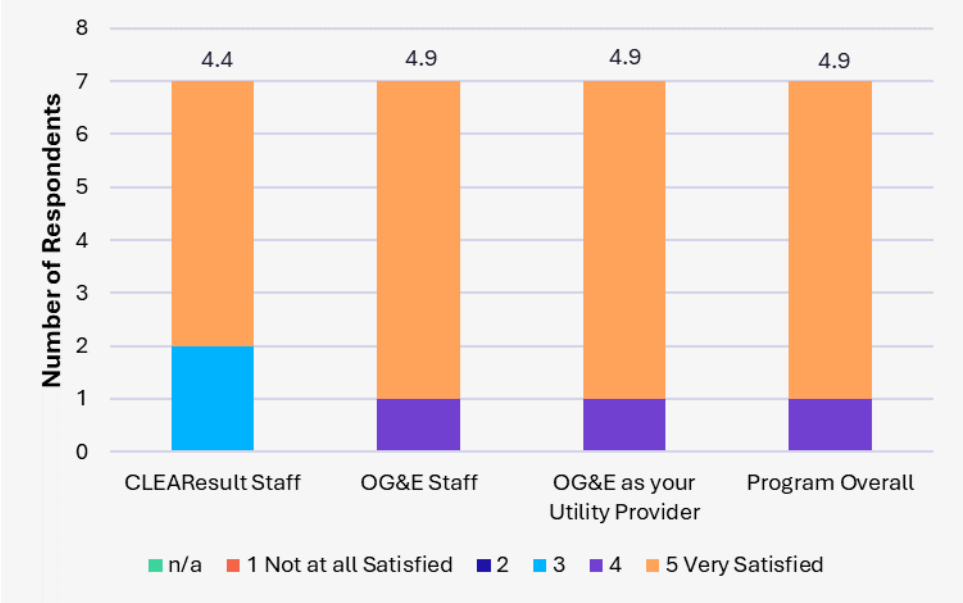
Respondents were neutral or very satisfied with the Trade Ally who installed their equipment overall, and with the technical support provided (Figure 5-15). Some participants did not receive educational materials or technical support from the Trade Ally who installed their equipment.

Figure 5-15 SAGE Participant Satisfaction with the Trade Ally who Installed their Equipment (n = 7)



Respondents were very satisfied with the channel overall and their interactions with CLEAResult and OG&E staff (Figure 5-16). They are also very satisfied with OG&E as their utility provider.

Figure 5-16 SAGE Participant Satisfaction with OG&E and CLEAResult (n = 7)

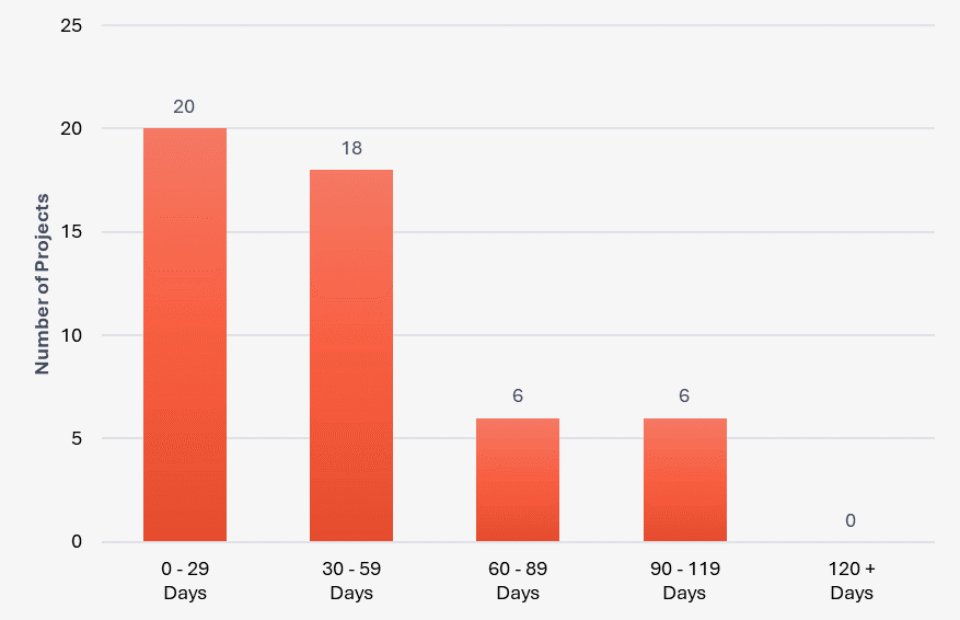


All seven respondents said they would likely recommend SAGE to someone else.

Cycle Time Analysis. AEG conducted a cycle time analysis on 50 SAGE projects with valid dates in the program tracking database to explore the time it takes from initial customer contact to measure

installation to inducement distribution. **The average number of days from enrollment to installation for the projects was 43.** Figure 5-17 shows the time from installation to payment for SAGE projects.

Figure 5-17 SAGE Number of Days from Installation to Payment



Small Business Direct Install (SBDI)

The SBDI channel is targeted to OG&E small business customers with an annual peak demand under 200 kW or multiple locations with a combined peak demand under 250 kW. The channel drives participation through an extensive contractor network. Contractors provide facility walk-throughs and inducements for prescriptive EE measures. SBDI participants are also eligible to participate in the CIS channel if the customer's needs are beyond the scope of services outlined within this channel. Inducements are $0.20 per kWh saved except for refrigerator door gaskets, which have inducements of $0.12 per kWh saved. All inducements are capped at 90% of the project cost.

SBDI – Key Evaluation Findings

The **impact evaluation** established SBDI evaluated gross energy savings of 7,637,796 kWh and evaluated gross demand savings of 804 kW, which amount to realization rates of 91% and 97%, respectively. Table 5-18 provides a summary of the SBDI impact evaluation findings.

Table 5-18 SBDI Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	8,380,373	7,637,796	91%	7,637,796	100%	80,624,635
Demand (kW)	827	804	97%	804	100%	n/a

The **impact evaluation** resulted in the following key findings:

- For sampled desk review and site visit projects, **AEG found that the tracking database and documentation were generally consistent** and only made small changes to energy savings based on minor observed or recorded differences in project characteristics. The types of changes made are common for desk reviews and site visits, such as updating quantities to account for LEDs placed into storage, changing LED wattages according to spec sheets or DLC data, and adjusting annual hours of use based on the customer's hours of operation.

- **Claimed savings for DI weatherstripping do not correspond with deemed savings values provided to AEG by CLEAResult.** These differences resulted in lower evaluated savings compared to claimed, consistently and proportionally for desk-reviewed projects by Oklahoma metropolitan area. This outcome is consistent with CIS findings (page 8181).

The **process evaluation** resulted in the following key findings:

- **Trade Allies like working with CLEAResult** and are satisfied with the program. They also say that the CLEAResult team is very responsive and helpful.
- The **eligibility requirements for the channel were increased** from 150 kW to 200 kW. The incentive also increased from $0.15 per kWh to $0.20 per kWh. The increase has led to more small businesses completing capital projects. Trade Allies used the change as a marketing tool and conducted outreach to businesses who are newly eligible.
- **The program is very efficient** in terms of timeliness. Projects were completed within an average of 45 days and incentives are paid on an average of nine days after installation.

SBDI – Recommendations

The **impact evaluation recommendations** are as follows:

- **Review, compare, and verify per-unit energy savings assumptions for DI weatherstripping.** Claimed savings for weatherstripping consistently and proportionately exceeded deemed savings values provided to AEG by CLEAResult.

The **process evaluation recommendations** are listed below. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- Consider more **targeted marketing**. Opportunities may exist in specific segments such as grocery stores. Marketing collateral geared towards specific segments would help Trade Allies in their outreach to these segments.
- * Consider **offering low- or no-interest financing** to customers. Small businesses often do not have the capital to complete projects.

SBDI – Impact Evaluation

Evaluation Approach. Table 5-4 (page 808080) summarizes the impact evaluation activities conducted to determine evaluated savings.

- As part of its savings verification efforts, AEG conducted **desk reviews** and completed **site visits** for the largest projects and **online surveys** for all other projects.
- AEG used the PY2021 NTG ratio to derive PY2023 net savings. AEG conducted an NTG update analysis in conjunction with the process participant survey to update the NTG ratio for PY2024.

We include detailed descriptions of each activity in Appendix A.

Table 5-19 SBDI Stratification

Stratum	No. of Projects	Sample Size
Lighting – Top 5%	3	3
Lighting – All Others	187	8
Non-Lighting – Top 5%	6	2
DI Weatherstripping	13	8
Refrigeration	149	14
Total	**358**	**35**

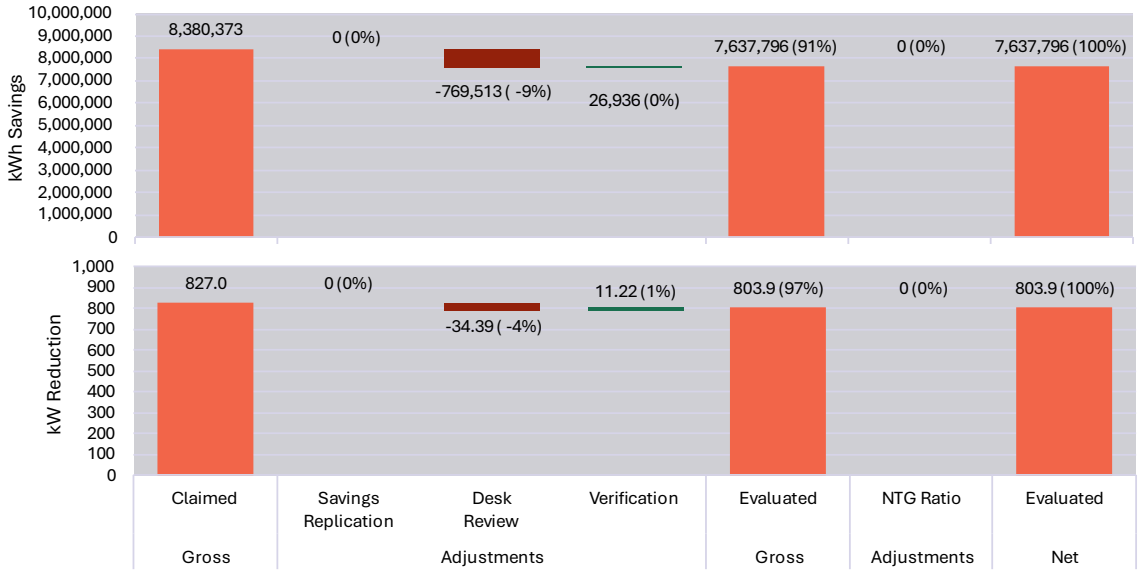
AEG used a stratified random sample for the desk reviews and savings verification. We defined the sample frame unit as one project and stratified the SBDI participant population (Table 5-19) using the following criteria:

- **Measure type**, which stratifies projects by whether they are lighting projects, ensuring that sampled findings logically extrapolate to the population.
- **Project size,** which stratifies projects by claimed savings size, minimizing the variation of our sample-extrapolated estimates. An average historical savings threshold determines the Top 5% stratum, for which we used a census sampling approach.

We include detailed descriptions of the sample design in Appendix B.

Evaluation Adjustments. Figure 5-18 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 5-18 SBDI Summary of Adjustments by Activity



- **Desk Review.** Claimed savings for weatherstripping consistently and proportionately exceeded deemed savings values provided to AEG by CLEAResult. This resulted in lower evaluated savings. Otherwise, tracking data were found to generally consistent with documentation.
- **Verification.** AEG conducted site visits for all *Lighting – Top 5%* projects. We conducted online surveys for all other projects. We found that all claimed measures were installed during our site visits.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2021 evaluation.

Stratum-Level Findings. Table 5-20 and Table 5-21 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and SBDI overall. At the channel level, the impact evaluation findings are at 18.3% precision (kWh) and 1.80% precision (kW) at the 90% confidence level. In

PY2024 AEG will devise its sampling plan to ensure all strata, including *Lighting – All Others*, are sufficiently sampled to ensure they achieve 10% relative precision at 90% confidence (i.e., 90/10).

Table 5-20 SBDI Evaluated Energy Savings by Stratum

Stratum	No. of Projects	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
DI Weatherstripping	13	8	2,959,613	2,421,462	82%	3,880	0.16%
Lighting – All Others	187	8	2,533,655	2,595,965	102%	1,445,461	55.68%
Lighting – Top 5%	3	3	511,979	438,424	86%	0	0.00%
Non-Lighting – Top 5%	6	2	1,155,103	962,498	83%	7,703	0.80%
Refrigeration	149	14	1,220,023	1,219,446	100%	805	0.07%
Total	**358**	**35**	**8,380,373**	**7,637,796**	**91%**	**1,398,543**	**18.31%**

Table 5-21 SBDI Evaluated Demand Reduction by Stratum

Stratum	No. of Projects	Sample Size	Gross Demand Reduction (kW)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
DI Weatherstripping	13	8	82	74	90%	0	0.04%
Lighting – All Others	187	8	527	509	97%	17	3.25%
Lighting – Top 5%	3	3	54	58	108%	-	0.00%
Non-Lighting – Top 5%	6	2	25	23	92%	0	0.20%
Refrigeration	149	14	139	139	100%	0	0.07%
Total	**358**	**35**	**827**	**804**	**97%**	**14**	**1.80%**

By stratum, the main reasons for the differences in claimed and evaluated savings are:

- **Lighting.** We found instances where the HOU reported was inconsistent with AR TRM HOU values for room types and retail stores. These decreased savings.
- **Non-lighting.** *DI Weatherstripping* measures used custom savings in a calculator provided by CLEAResult. AEG reviewed CLEAResult's analysis and found that it was reasonable and followed the AR TRM. However, AEG consistently found claimed energy savings to be roughly 20% higher than deemed by the calculator.

Figure 5-19 shows the SBDI savings distribution by stratum. *Non-Lighting* projects made up 64% of claimed energy savings, and 35% came from *DI Weatherstripping* measures. Conversely, *Lighting – Top 5%* and *Lighting – All Others* projects made up the majority of claimed demand reduction (70%). Consequently, adjustments to *DI Weatherstripping* measures have a more substantial impact on evaluated energy savings than demand reductions.

Figure 5-19 SBDI Claimed and Evaluated Savings by Stratum

Finally, Table 5-22 shows the net lifetime energy savings by measure. LED retrofits and DI weatherstripping made up 97% of lifetime savings. EULs come from the AR TRM.

Table 5-22 SBDI Net Lifetime Energy Savings by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
SBDI - Lighting - Top 5%	15.0	6,576,367
SBDI - Lighting - All Others	12.3	31,946,924
SBDI - Non-Lighting - Top 5%	11.0	10,587,473
SBDI - DI Weatherstripping	11.0	26,636,086
Refrigeration	4.0	4,877,786
Total	**10.6**	**80,624,635**

SBDI – Process Evaluation

Evaluation Approach. Table 5-5 (page 8181) above summarizes the process evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in Appendix A. We performed the following activities:

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and CLEAResult manager** to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- We also conducted **Trade Ally interviews** with three of 11 contractors that completed projects in 2023.
- AEG conducts **participant surveys** for each channel once during the 3-year program cycle. The participant survey for SBDI is scheduled for 2024.

Program Performance. Table 5-23 shows how SBDI performance has changed since PY2022. Compared to the previous program year, energy savings decreased by 15% but demand reduction increased by 8%.

Table 5-23 SBDI Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	**Claimed**	**Share of CEEP**	**Claimed**	**Share of CEEP**	**PY2022 v. PY2023**
Energy (kWh)	9,909,987	8%	8,380,373	6%	-15%
Demand (kW)	768	3%	827	4%	8%

Channel Operations. This channel is primarily contractor-driven, and CLEAResult has built a strong Trade Ally network for the program, vetting, and only using state-licensed contractors to perform the work. The Trade Ally network is trained on a mobile field tool to conduct initial customer assessments. The tool generates a project proposal, which includes recommendations for measures and upgrades.

The eligibility requirements for the channel were increased from 150 kW in PY2022 to 200 kW in PY2023. The incentive also increased from $0.15 per kWh to $0.20 per kWh. The increase has led to more small businesses completing capital projects. Trade Allies used the change as a marketing tool and conducted outreach to businesses who are newly eligible due to the change in eligibility requirements.

Trade Allies generally report a good working relationship with CLEAResult, who is very responsive to any questions that they have.

> "*The small business program is incredibly efficient. They are great, responsive.*"

> *"They are really good about answering questions. They make the whole thing a team effort*."

Barriers to Participation. Lack of awareness is the main barrier to participation. Customers do not respond well to email or direct mail marketing efforts.

> *"They do a good job marketing – but everyone is numb from emails and letters, EE can fall by the wayside. People have become desensitized to it."*

> *"Face to face always works better than other strategies."*

Program Effectiveness. Trade Allies report a high conversion rate on their proposals and feel that few customers would make the improvements without the program.

> *"They will get the work done eventually, but they will do more, sooner, with the program."*

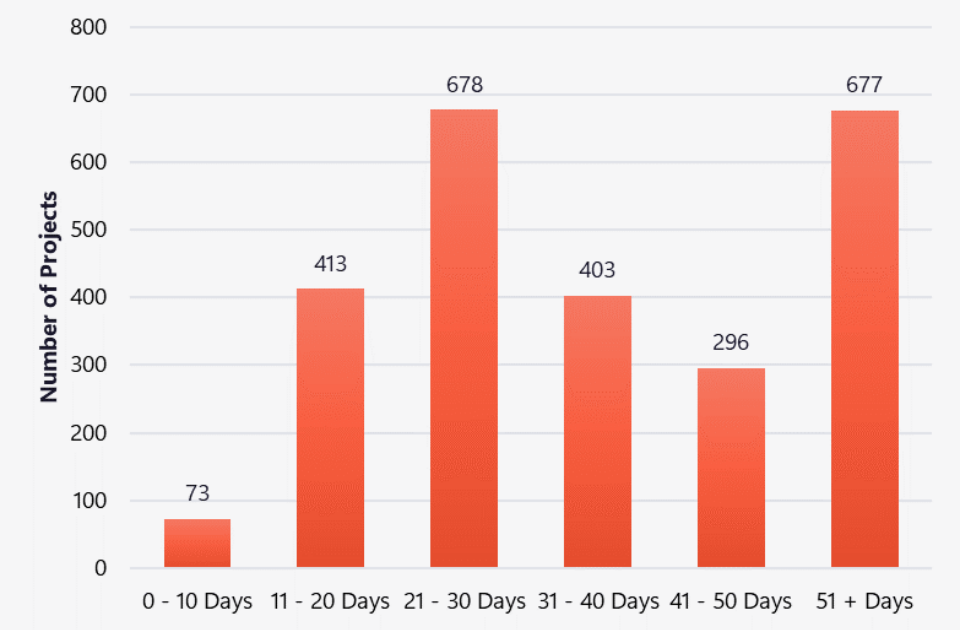
> *"Most of them probably would not do the project without the incentive."*

The program is also very helpful for Trade Allies business.

> *"It's tougher to make the sale when there are no incentives available."*

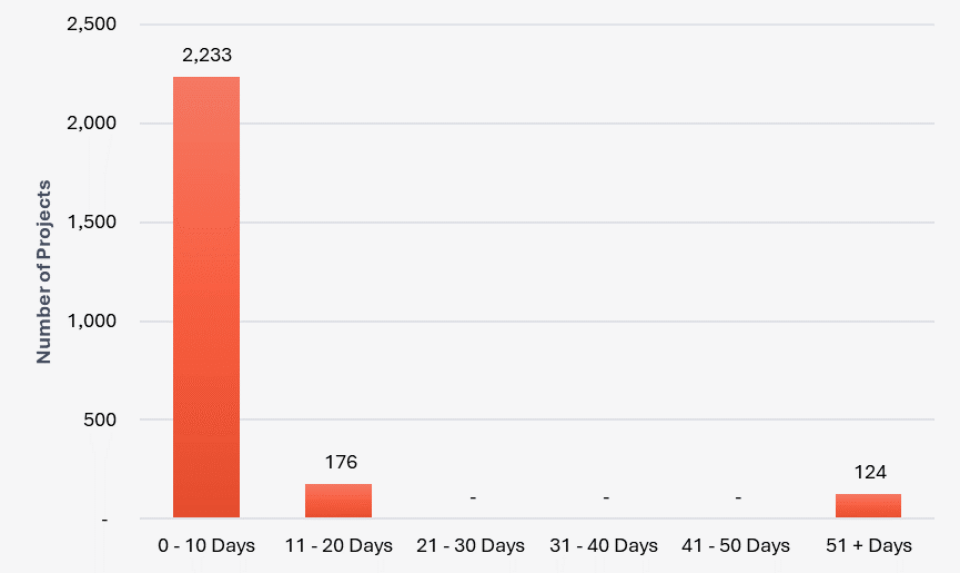
Cycle Time Analysis. AEG conducted a cycle time analysis to explore the time it takes from assessment to measure installation to inducement distribution, across nearly 2,500 installations. Figure 5-20 shows the days from assessment to installation for SBDI projects. **The projects averaged 45 days from project start to installation.**

Figure 5-20 SBDI Number of Days from Project Start to Installation



The cycle time analysis shows the time from installation to payment (Figure 5-21). The average time from installation to payment was nine days.

Figure 5-21 SBDI Number of Days from Installation to Payment



Small Business Midstream (Midstream)

The Midstream channel offers point-of-sale (POS) inducements for qualified products to OG&E commercial customers through participating local and national distributors. Unlike an upstream design, the Midstream channel collects data on both distributors and purchasers. This program channel offers an opportunity to participate in EE programs for contractors and end-users who might not otherwise pursue applying through another CEEP channel. Through this channel, financial inducements are paid to the distributor to reduce costs for the end-use customer.

Midstream – Key Evaluation Findings

The **impact evaluation** established Midstream evaluated gross energy savings of 31,168,269 kWh and evaluated gross demand savings of 4,845 kW, which amount to 100% realization rates. Table 5-26 provides a summary of the Midstream impact evaluation findings.

Table 5-24 Midstream Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	31,307,767	31,168,269	100%	27,428,077	88%	378,936,465
Demand (kW)	4,850	4,845	100%	4,264	88%	n/a

The **impact evaluation** resulted in the following key findings:

- **For the lighting measures, AEG estimated slightly different savings.** AEG found consistent differences in claimed and evaluated lighting savings. The differences were due to the manufacturer's cut sheets being slightly different than the claimed lumens and wattages. In some cases, minor differences in lumens and wattages can change the baseline fixture wattage as baseline fixture wattage depends on lumens grouped within buckets. This decreased the savings.
- **AEG used the recommended 3-year rolling average lighting hours of use from the PY2021 evaluation report.** AEG will continue to use those hours in PY2024. At the end of PY2024, we will derive a new, forward-looking 3-year rolling average based on 2022-2024 data, which we recommend using for PY2025 through PY2027.

The **process evaluation** resulted in the following key findings:

- **It is extremely easy for customers to participate**. They get instant discounts when they make a qualifying purchase. The CLEAResult tool validates customer sales quickly and easily.
- **The channel still heavily features LED lighting**, although more kitchen measures were added. Refrigerators and freezers are popular, but they are not as cost-effective.

Midstream – Recommendations

The **impact evaluation recommendations** are as follows:

- **Report the size of convection ovens in program tracking data.** Without the size (full-size or half-size) or number of pans, it is difficult to ascertain the appropriate level of savings per unit.

The **process evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * **Engage more restaurant supply distributors in the channel**. There is currently only one participating distributor, and they represent less than 1% of the savings.
- * Continue to pursue **additional measures for the channel**. Midstream remains very lighting heavy.
- **Consider raising the monthly cap per customers**. Some customers are currently making several separate purchases for larger projects in order to stay under the cap.
    - If the intent is to have larger projects completed under a different CEEP channel, provide marketing materials to distributors, and educate them about other OG&E program opportunities.

Midstream – Impact Evaluation

Evaluation Approach. Table 5-4 (page 8080) summarizes the impact evaluation activities conducted on Midstream to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

- AEG conducted **desk reviews** and administered **online surveys** as part of savings verification efforts.

- AEG used the PY2021 NTG ratio to derive PY2023 net savings. AEG conducted an NTG update analysis in conjunction with the process participant survey to update the NTG ratio for PY2024.

AEG used a stratified random sample for desk reviews and savings verification. We defined the sample frame unit as one invoice and stratified the Midstream participant population (Table 5-25) by project size. We used a historical threshold to identify the projects within the top 5% of claimed energy savings. Lighting projects comprised more than 99% of claimed savings.

Table 5-25 Midstream Stratification

Stratum	No. of Projects	Sample Size
Lighting – Top 5%	2,217	14
Lighting – All Others	205	13
Kitchen	54	19
Total	**2,476**	**46**

Evaluation Adjustments. Figure 5-22 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 5-22 Midstream Summary of Adjustments by Activity

- **Savings Replication.** AEG conducted a savings replication for all Midstream's measures. We used the baseline lighting methodology from 2021, the same methodology used in the claimed savings. However, we found slight differences in the savings replication due to how AEG mapped the efficient lumens to the baseline wattage. This slightly decreased savings.
- **Desk Review.** We did not apply adjustments for most projects in our sample and only applied minor adjustments when appropriate.
    - **Lighting.** Only five of the 29 lighting desk reviews required a lumens correction. Then nine of the projects needed an efficiency correction. One project had a significantly lower quantity found during desk review than was reported. These adjustments typically decreased energy savings but increased demand reduction.
    - **Refrigerators and freezers**. We used actual ES data for each measure, not AR TRM defaults, which increased savings. One project was found to be inaccurately calculated as a refrigerator rather than freezer, the correction for which significantly increased savings.

- **Savings Verification.** AEG conducted online surveys to determine the channel ISRs. We found that the ISR for all measures was 100%.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2021 evaluation.

Stratum-Level Findings. Table 5-26 and Table 5-27 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and Midstream overall. At the channel level, the impact evaluation findings are at 0.53% precision (kWh) and 0.76% precision (kW) at the 90% confidence level. The relative precision for both energy savings and demand reduction exceed the minimum industry standards of 10% at 90% confidence (i.e., 90/10).

Table 5-26 Midstream Evaluated Energy Savings by Stratum

Stratum	No. of Invoices	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Lighting – Top 5%	2,217	14	19,839,208	19,779,211	100%	162,642	0.82%
Lighting – All Others	205	13	11,399,291	11,311,819	99%	20,229	0.18%
Kitchen	54	19	69,268	77,239	112%	3,537	4.58%
Total	**2,476**	**46**	**31,307,767**	**31,168,269**	**100%**	**163,933**	**0.53%**

Table 5-27 Midstream Evaluated Demand Reduction by Stratum

Stratum	No. of Invoices	Sample Size	Gross Demand Reduction (kW)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Lighting – Top 5%	2,217	14	3,123	3,125	100%	36	1.17%
Lighting – All Others	205	13	1,718	1,709	100%	4	0.26%
Kitchen	54	19	9	10	111%	1	5.26%
Total	**2,476**	**46**	**4,850**	**4,845**	**100%**	**37**	**0.76%**

Measure-Level Savings. Midstream is comprised of lighting measures and kitchen measures. Table 5-28 shows the evaluated savings by measure category.

Table 5-28 Midstream Evaluated Savings by Measure

Measure	No. of Invoices	Gross Energy Savings (kWh)			Gross Demand Reduction (kW)		
		Claimed	Evaluated	RR	Claimed	Evaluated	RR
LED Fixture	1,920	27,820,695	27,728,219	100%	4,127	4,108	100%
LED Bulb	479	3,372,185	3,314,804	98%	680	713	105%
Occupancy Sensor	23	45,619	48,007	105%	33	14	44%
Energy Star Refrigerator	35	10,855	12,040	111%	1	1	110%
Energy Star Freezer	12	6,360	7,062	111%	1	1	111%
Energy Star Convection Oven	3	9,942	11,452	115%	2	2	114%
Energy Star Dishwasher	4	42,111	46,684	111%	5	6	110%
Total	**2,476**	**31,307,767**	**31,168,269**	**100%**	**4,850**	**4,845**	**100%**

Figure 5-23 shows the Midstream distribution of measures. LED fixtures comprised 89% of Midstream evaluated energy savings, and LED bulbs made up 11%.

Figure 5-23 Midstream Claimed and Evaluated Savings by Measure

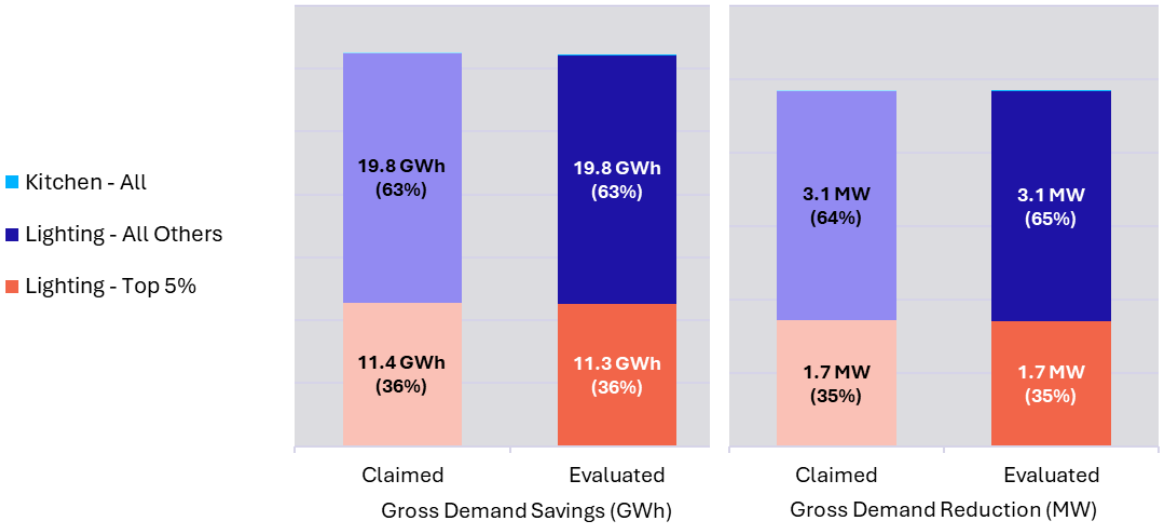


Table 5-29 shows the net lifetime energy savings for the Midstream channel. EULs come from the AR TRM. LED fixtures and bulbs comprise more than 99% of lifetime energy savings.

Table 5-29 Midstream Net Lifetime Energy Savings by Measure

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
LED Fixture	15	366,012,494
LED Bulb	4	11,668,110
Occupancy Sensor	8	337,969
Energy Star Refrigerator	12	127,148
Energy Star Freezer	12	74,573
Energy Star Convection Oven	12	120,936
Energy Star Dishwasher	14	595,236
Total	**13.8**	**378,936,465**

Net-to-Gross Analysis. As part of the participant survey, AEG assessed NTG ratios to be applied in PY2024. The resulting NTG ratio is roughly 10 percentage points higher (98%) than the ratio assessed in PY2021 (88%). AEG applied the PY2021 NTG ratio for this year's net savings.

A detailed methodology can be found in Appendix D.

Midstream – Process Evaluation

Evaluation Approach. Table 5-5 (page 8181) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A. We performed the following activities:

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and CLEAResult manager** to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- We also conducted **Trade Ally interviews** with six of 17 contractors that completed projects in PY2023.
- AEG administered an **online survey** to the 1,208 customers who participated in the channel in PY2023. Eighty-six participants completed the survey for a response rate of 7%. The survey covered topics such as awareness, motivation, and satisfaction, and AEG used results to estimate the Midstream channel's NTG ratio.

Program Performance. Table 5-30 shows how Midstream performance has changed since PY2022. Energy savings and demand reduction decreased by 11% and 17%, respectively, compared to the previous program year. Midstream continues to be a leading contributor to CEEP, with 23% and 24% of overall energy and demand savings, respectively.

Table 5-30 Midstream Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	**Claimed**	**Share of CEEP**	**Claimed**	**Share of CEEP**	**PY2022 v. PY2023**
Energy (kWh)	34,986,267	26%	31,307,767	23%	-11%
Demand (kW)	5,856	27%	4,850	24%	-17%

Channel Operations. The Midstream channel is designed to provide POS discounts for the commercial sector. **The channel has 17 approved participating distributors** who are required to have at least one brick-and-mortar location in OG&E's service territory. The distributors are provided with a Program Partner Central tool that can validate the measure and the customer when the customer purchases the product. The inducement is seamless for customers: they get the discount at purchase and the distributor takes care of all paperwork. There is a monthly cap of $2,500 per customer per distributor.

Midstream Customer Participation Process

- Customer visits distributor to make purchase.
- Distributors validate customer and measure eligibility with tool.
- Customer receives instant discount at point of purchase.
- Distributor submits sales data to CLEAResult.
- Inducement paid to distributor.

Almost all savings (99.8%) are generated by lighting measures. The remaining 0.2% of savings comes from ENERGY STAR freezers, refrigerators, and dishwashers. Although 17 distributors participated in PY2023, four distributors were responsible for 54% of the channel savings. All kitchen measures were provided by one vendor, a restaurant supply company.

Channel Satisfaction. According to CLEAResult, all Midstream marketing is done by distributors on location. They support the distributors by providing marketing collateral such as window clings, mats, bar stools, and physical handouts.

Trade Allies are extremely satisfied with CLEAResult and feel the Midstreeam channel has a positive effect on their business.

> *"Midstream is a pretty well-oiled machine. The public knows what is out there and it's pretty easy to use. No complaints."*

Overall, the participants surveyed found the information provided to be clear with the majority giving a clarity ranking of 4 or 5 on a 5-point scale (Figure 5-24). The application process received the lowest clarity ratings from participants.

Figure 5-24 Midstream Clarity of Information Provided to Participants (n = 86)

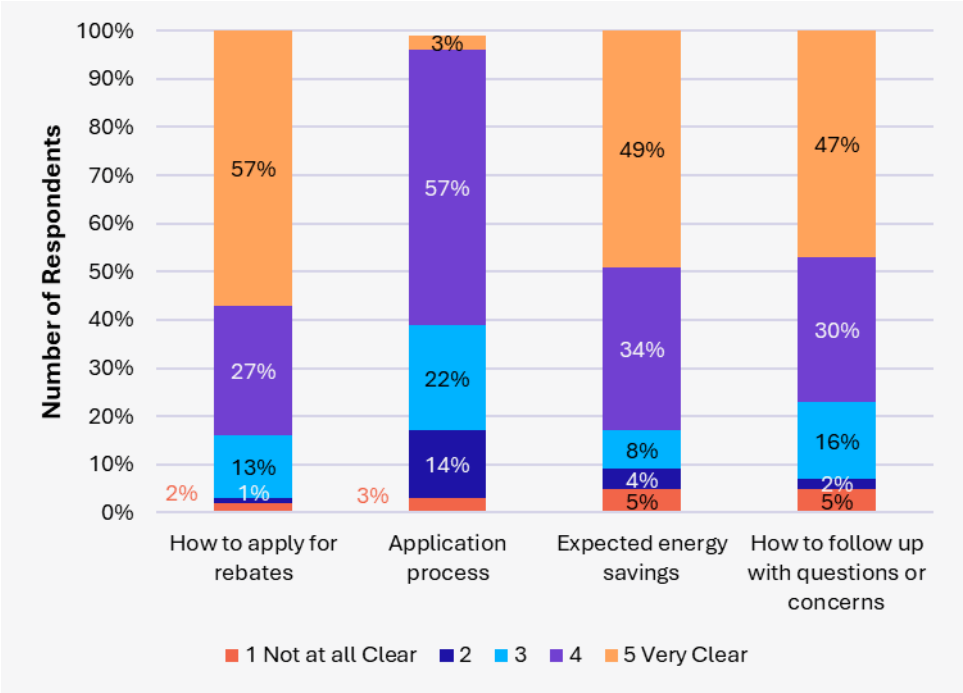
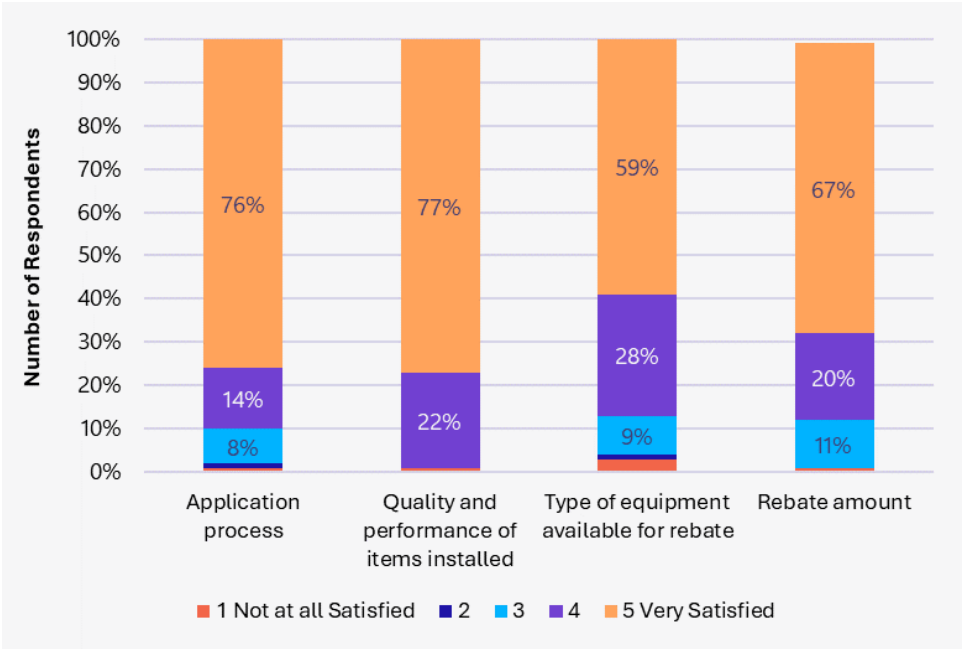


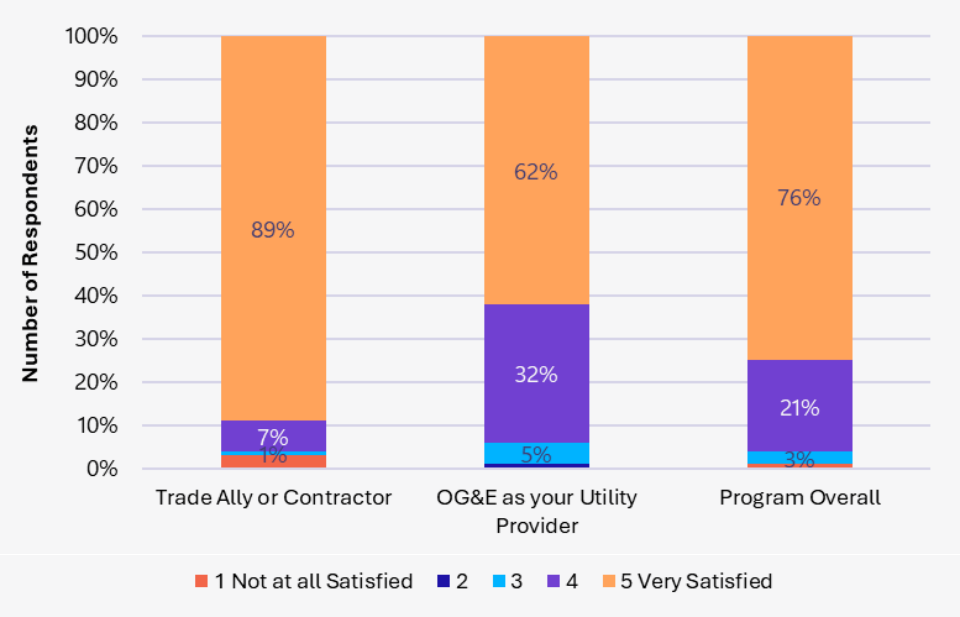
Figure 5-25 shows that almost all respondents were satisfied with the application process and the equipment installed.

Figure 5-25 Midstream Participant Satisfaction with Process and Equipment (n = 86)



Participants were very satisfied with the channel overall, the Trade Ally they worked with, and OG&E as their utility provider (Figure 5-26).

Figure 5-26 Midstream Participant Overall Satisfaction (n = 79)



Eighty-eight percent of participants said it was likely they would recommend the Midstream channel. When asked for feedback on how to improve the program participants suggested allowing larger dollar amounts for single purchases and making more people aware of the program.

Continuous Energy Improvement (CEI)

The CEI channel works with cohorts of facility and energy management professionals from participating commercial and industrial facilities. The channel works to build momentum behind energy management as a concept and a component of company culture at each facility. After initial no/low-cost opportunities yield results, the channel works with the participants to identify opportunities for longer term capital projects or retro-commissioning opportunities, which are then shuttled through the appropriate program channel.

CEI – Key Evaluation Findings

The **impact evaluation** established CEI evaluated gross energy savings of 30,334,751 kWh and evaluated gross demand savings of 4,350 kW, which amount to 100% realization rates. Table 5-31 provides a summary of the CEI impact evaluation findings.

Table 5-31 CEI Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	30,334,751	30,334,751	100%	30,334,751	100%	30,334,751
Demand (kW)	4,350	4,350	100%	4,350	100%	n/a

The **impact evaluation** resulted in the following key findings:

- **AEG was able to replicate models using the data provided and found that all large C&I models adhered to established statistical standards.** As such, AEG accepted all energy savings with 100% realization rates.
    - Not all school models adhered to every statistical standard, but that was primarily due to data limitations. On average, each model was sufficient and optimized given the limited data.

The **process evaluation** resulted in the following key findings:

- **CEI has transitioned back to an in-person model**, although some content remains available virtually.
- **CEI is a mature program that is focused on deepening savings**. The CLEAResult program manager reports that they continue to find savings opportunities at customer sites.
- The program **is very successful**, both in terms of savings achieved and customer satisfaction.
- Customers often learn about CEI through other CEEP channels.
- Schools that have participated in SAGE may be good candidates for CEI.

CEI – Recommendations

The **process evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * **If the channel continues to operate on a calendar year basis, consider ways to keep customers engaged after they receive final payments.** AEG's historical analysis showed that the end-of-year forecasted savings are accurate, but there is a chance that customers can become disengaged.
- * Consider sending customers monthly reports during the final months of Q4 to keep them engaged.
- * Consider offering customers extra inducements if they exceed their forecasted savings.
- * **Continue to improve the customer experience** by:
    - Exploring the idea of providing customers with a **dedicated Energy Manager** to help them manage EE projects. The Energy Manager could be a flexible resource that spends time at each customer site.
    - Recruiting participants to **host site visits** or tours to allow other active and prospective participants to see the results in action.
    - Providing a **specific case study** for one or more of the topics in the technical workshop.

CEI – Impact Evaluation

Evaluation Approach. Table 5-4 (page 8080) summarizes the impact evaluation activities conducted on CEI to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

- AEG conducted **desk reviews** by replicating and performing QA/QC on baseline models, data, and inducement checks on the census of large C&I and school models.
- AEG used the PY2021 NTG ratio to derive PY2023 net savings. AEG conducted an NTG update analysis in conjunction with the process participant survey to update the NTG ratio for PY2024.

Evaluation Adjustments. AEG did not make any adjustments to the CEI projects sampled for the evaluation during savings replication or the desk reviews and did not conduct verification with any CEI customers.

Net-to-Gross. AEG applied the NTG ratio from the PY2021 evaluation (100%).

Net Lifetime Savings. CEI measures are assumed to have a one-year measure life such that the evaluated lifetime savings equal the estimated first-year energy savings.

CEI – Process Evaluation

Evaluation Approach. Table 5-5 (page 8181) summarizes the process evaluation activities conducted to determine evaluated savings. We include detailed descriptions of each activity in Appendix A. We performed the following activities:

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and CLEAResult manager** to gather their impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.
- We also reviewed participant evaluations from three CLEAResult workshops.
- AEG conducts participant surveys for each channel once during the 3-year program cycle. The participant survey for CEI is scheduled for PY2024.

Program Performance. Table 5-32 shows how CEI performance has changed since 2022. Relative to the previous program year, energy savings decreased by 13%, and demand reduction decreased by 21%.

Table 5-32 CEI – Claimed Savings PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	Claimed	Share of CEEP	Claimed	Share of CEEP	PY2022 v. PY2023
Energy (kWh)	31,671,992	24%	30,334,751	23%	-13%
Demand (kW)	5,477	25%	4,350	22%	-21%

Channel Operations. CEI is a behavior-based program that engages customers to participate in a cohort through a series of workshops and training. The interactive cohort style allows participants to learn from one another and the information provided in the workshops. Each customer receives an audit at the beginning of participation to better understand the building operations. Energy savings are modeled, and customers receive two inducements: at the 6-month mark and at the end of the year. Twice-a-year payouts have helped influence customers to implement projects.

Participants are recruited through one-on-one in-person marketing. CLEAResult works with OG&E AEs to introduce them to potential participants. Some customers who have completed custom projects through CEEP are also referred to CEI.

CEI Customer Participation Process

- Customer joins cohort.
- Customer receives audit.
- Customer attends workshops and trainings.
- Customer implements projects.
- CLEAResult models energy savings.
- Inducements paid to customers at six months and at one year.

The program had 26 participants in PY2023, 13 of which were schools.

For the most part, the channel has transitioned back to an in-person model. With the virtual model, it was hard for participants to give the focus they need to the program when they are online at their facility. But some topics/meetings/workshops are still conducted virtually when it makes more sense given the topic and the availability of participants to travel to a central location.

Channel Effectiveness. The implementer reports that CEI is one of the channels that has been successful year after year. It has achieved consistent results and is viewed favorably by customers. Conversations initiated through the channel exposes customers to new ideas. In fact, several participants have been featured in local news and community events as EE champions.

AEG reviewed the participant workshop evaluations as part of the process evaluation. Data was provided for three workshops delivered in 2023: a kickoff workshop and two technical workshops. Participants rated the workshops on the following:

- If the workshop encouraged participation,
- The quality of the presentations,
- The quality of facilitation,
- Usefulness of the information,
- Amount of material covered, and
- Pace of the workshop.

Overall, participants rated the workshops very highly, with average scores for participation, quality, and usefulness ranging from 4.4 to 4.7 on a 5-point scale. All 18 of the respondents across the three workshops said that the pace and the amount of content was perfect.

Almost all respondents said that the best part of the workshops was networking with their peers. The participants offered the following recommendations for program improvement:

- Recruit participants to offer site visits or tours for other participants
- Provide case studies on topics introduced in the workshops

- Provide participants with slides or other materials presented during the workshops

HVAC Replacement and Tune-Up (C&I HVAC)

The C&I HVAC channel focuses on energy savings by optimizing existing HVAC units and replacing older inefficient systems. Customer-requested HVAC tune-ups or unit replacements are completed through a network of participating contractors (Trade Allies). When customers contact the CEEP program, the project team refers them to available contractors or schedule an appointment for them. Trade Allies complete the tune-up or HVAC unit replacement, the data collection on system performance, and the paperwork required to submit the applicable channel rebate forms. Savings are estimated using CLEAResult's CoolSaver tool, which performs pre- and post-measurements on the HVAC equipment receiving tune-ups and model measure savings. Once the application has passed the channel requirements review, it is processed, and the rebate is paid directly from OG&E to the Trade Allies.

C&I HVAC – Key Evaluation Findings

The **impact evaluation** established C&I HVAC evaluated gross energy savings of 7,153,774 kWh and evaluated gross demand savings of 3,974 kW, which amount to realization rates of 99% and 100%, respectively. Table 5-33 provides a summary of the C&I HVAC impact evaluation findings.

Table 5-33 C&I HVAC Impact Evaluation Summary

Savings	Gross Savings			Net Savings		
	Claimed	Evaluated	RR	Evaluated	NTG	Lifetime
Energy (kWh)	7,240,034	7,153,774	99%	6,152,245	86%	30,761,226
Demand (kW)	3,966	3,974	100%	3,418	86%	n/a

The **impact evaluation** resulted in the following key findings:

- **The CLEAResult CoolSaver tool is robust and leads to accurate savings.** AEG's savings replication efforts, desk reviews, and site visits found that the channel operates well.
- **Some building types in the channel do not have direct AR TRM building types.** Mapping building types not specified in the AR TRM to the appropriate building type is difficult. AEG conducted a similarity analysis of the AR TRM building types that map to the IL TRM building types, producing a simple but imperfect mapping.
    - Differences in mapping result in different effective full load hours (EFLH), which influence savings estimates. Despite these differences, C&I HVAC achieved a 99% realization rate.

The **process evaluation** resulted in the following key findings:

- **All savings come from HVAC tune-ups**. Inducements are too small to influence high-efficiency HVAC replacement.
- Trade Allies have a good relationship with CLEAResult and say the channel is easy to participate in.
- The implementer has **recruited more** Trade Allies, including **rural Trade Allies**. This has helped the program reach previously underserved customers.

C&I HVAC – Recommendations

The **impact evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * In program tracking data, **assign facility types that conform with the AR TRM.** This will facilitate validation of EFLH and other critical inputs to savings, and any changes to inputs during AEG's desk review or site visit verification steps can be reviewed and substantiated within a consistent framework.

The **process evaluation recommendations** are as follows. Recommendations carried over from the PY2022 evaluation are indicated with a purple asterisk (*).

- * Continue to **recruit more Trade Allies** to the program, particularly Trade Allies that serve **rural areas.**
- Provide **additional incentives** for Trade Allies to serve **rural areas**.
- Focus outreach on customers **without dedicated maintenance staff** to reduce potential free ridership.

C&I HVAC – Impact Evaluation

Evaluation Approach. Table 5-4 (page 80) summarizes the impact evaluation activities conducted on C&I HVAC to determine evaluated savings. We include detailed descriptions of each activity in Appendix A.

- AEG conducted **site visits** for the largest projects (top 5% using a historical threshold) and online **participant surveys** for other projects as part of savings verification efforts.
    - AEG conducted a NTG analysis as part of its online survey but experienced low response rates. To supplement the online survey, AEG asked the NTG battery of questions to five participants during Q4 site visits to bring the total number of responses to seven. Results from these online and in-person surveys will be combined with PY2022 results to derive a NTG ratio for PY2024.

Evaluation Adjustments. Figure 5-27 presents a summary of impact evaluation adjustments from each activity. We discuss the driver of each adjustment below.

Figure 5-27 C&I HVAC Summary of Adjustments by Activity

- **Savings Replication.** AEG conducted a savings replication using all reported inputs for all C&I HVAC measures. The adjustments are from slight rounding differences.
    - Two projects did not have reported inputs, so AEG accepted savings as-is.
    - Four projects had negative claimed savings. It's unlikely that tune-ups made HVAC units less efficient. As such, AEG set negative savings to 0 kWh.
- **Desk Review.** AEG did not conduct desk reviews in the same manner as other channels. Instead, we recreated the inputs using other reported data and conducted a building type mapping for buildings not specified in the AR TRM.
    - We mapped building types not specified in the AR TRM differently. We based our building type mapping on a similarity analysis of the IL TRM building types and compared that to the AR TRM. This slightly decreased the savings.
    - In spot-checking model numbers, there is evidence to suggest that capacities are not reported with 100% accuracy. However, given the large number of model numbers to review, AEG accepted the capacities as-is as part of our savings calculations.

- **Savings Verification.** AEG conducted site visits and online surveys to verify that projects received tune-ups and that the equipment was still operating. We found that all measures received tune-ups and were still working.
- **Net-to-Gross.** AEG applied the NTG ratio from the PY2022 evaluation.

Stratum-Level Findings. Table 5-34 and Table 5-35 show the evaluated savings and the corresponding precision at the 90% confidence level for each stratum and C&I HVAC overall. We used a census sampling approach for all activities, thus having no precision estimates around the savings.

Table 5-34 C&I HVAC Evaluated Energy Savings by Stratum

Stratum	No. of Projects	Sample Size	Gross Energy Savings (kWh)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Top 5%	7	7	2,172,220	2,115,080	97%	0	0.00%
All Others	189	189	5,067,814	5,038,693	99%	0	0.00%
Total	**196**	**196**	**7,240,034**	**7,153,774**	**99%**	**-**	**0.00%**

Table 5-35 C&I HVAC Evaluated Demand Reduction by Stratum

Stratum	No. of Projects	Sample Size	Gross Demand Reduction (kW)			90% Confidence	
			Claimed	Evaluated	RR	Abs. Prec.	Rel. Prec.
Top 5%	7	7	1,143	1,147	100%	0	0.00%
All Others	189	189	2,824	2,827	100%	0	0.00%
Total	**196**	**196**	**3,966**	**3,974**	**100%**	**-**	**0.00%**

Figure 5-28 shows the C&I HVAC energy and demand savings distribution by stratum. The top 5% of largest projects comprised 30% of the total evaluated savings.

Figure 5-28 C&I HVAC Claimed and Evaluated Savings by Stratum

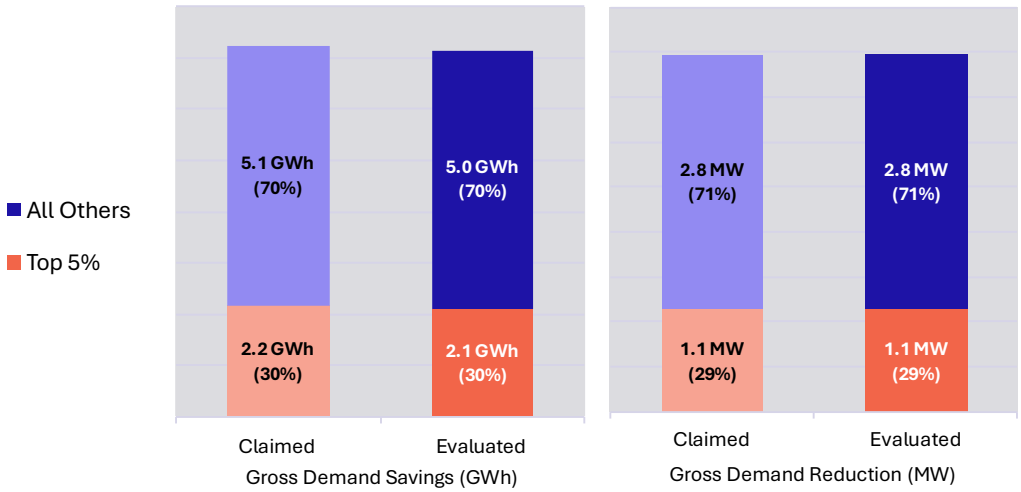


Table 5-36 shows the net lifetime energy savings. Tune-ups were the only measure this year, and they had an EUL of five years, courtesy of the AR TRM.

Table 5-36 C&I HVAC Net Lifetime Savings

Measure	Estimated Useful Life (EUL)	Net Lifetime Energy Savings (kWh)
All Others	5	21,666,382
Top 5%	5	9,094,844
Total	**5.0**	**30,761,226**

Net-to-Gross Analysis. AEG assessed NTG scores for C&I HVAC in PY2022. Since the response rate was low, we conducted additional NTG analysis in PY2023. AEG was not able to survey enough decision makers to inform the analysis.

C&I HVAC – Process Evaluation

Evaluation Approach. Table 5-5 (page 81) summarizes the process evaluation activities conducted in 2023. We include detailed descriptions of each activity in Appendix A. We performed the following activities:

- AEG conducted separate, comprehensive **interviews with the OG&E program manager and the CLEAResult manager** and with three of the eleven participating Trade Allies that completed a project in 2023. The interviews gathered impressions of the channel's implementation activities, performance, delivery issues, and opportunities for improvements.

Program Performance. Table 5-37 shows how C&I HVAC performance has changed since PY2022. Energy savings and demand reduction increased by 19%, compared to the previous program year.

Table 5-37 C&I HVAC Claimed Savings – PY2022 v. PY2023

	PY2022		PY2023		% Diff.
Gross Savings	Claimed	Share of CEEP	Claimed	Share of CEEP	PY2022 v. PY2023
Energy (kWh)	6,075,441	5%	7,240,034	5%	19%
Demand (kW)	3,329	15%	3,966	20%	19%

Channel Operations. The channel provides no-cost HVAC tune-ups to C&I customers who have not tuned up their HVAC systems within the last five years. **The channel is marketed by the Trade Ally network, focusing on small business customers and school districts.** Although rebates for high-efficiency HVAC units are also offered, no HVAC units were rebated through the channel in PY2023.

According to the implementer, the channel has recruited more Trade Allies, with a focus on rural Trade Allies. This has helped the program reach previously underserved customers.

The Trade Allies have a strong relationship with CLEAResult. Trade Allies also said that customers are very happy with the channel. Participating in the channel is also very beneficial for Trade Allies' businesses.

> *"OG&E has a good program. I like the customer screening, other programs I have experience with don't do that."*

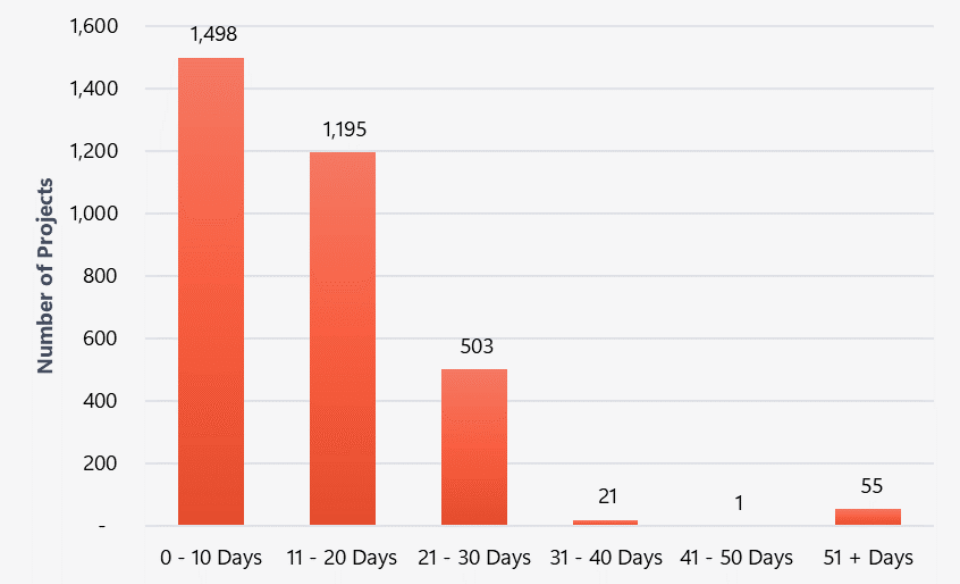
> *"The staff at CLEAResult are pretty awesome. They respond to questions quickly."*

The Trade Allies feel that participating customers would not have made these EE improvements without the influence of the program.

> *"Most commercial customers wouldn't pay for tune-ups because they often have a maintenance staff that should be doing this work themselves."*

Cycle Time Analysis. Cycle time analysis was conducted for the channel to explore the time it takes from initial customer contact to tune-up to inducement distribution. The figure below shows the number of days from tune up to payment. As shown in Figure 5-29, most payments were completed within 10 days of the tune-up, with an average of 14 days.

Figure 5-29 C&I HVAC Number of Days from Tune-Up to Payment



A | DETAILED METHODOLOGIES

This section provides detailed methodologies of the data collection and analyses used for the impact and process evaluations across all programs.

Impact Evaluation Approach

The impact evaluation has three objectives: (1) estimate evaluated gross savings, (2) estimate evaluated net savings, and (3) test program cost-effectiveness. We used a combination of evaluation activities to produce a customized approach appropriate to each program and channel. Figure A-1 shows the evaluation activities performed in the PY2023 evaluation and maps each activity to the corresponding objective. Table A-1 summarizes the impact evaluation activities performed for each program and channel. We describe each activity in detail below.

Figure A-1 Impact Evaluation Activities

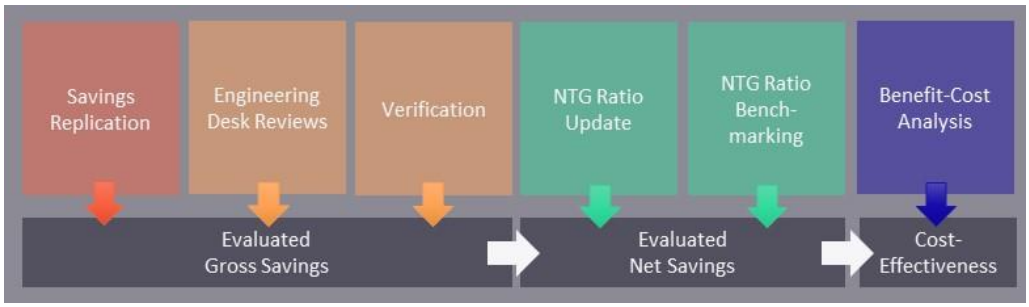


Table A-1 Impact Evaluation Activities by Program and Channel

Program/Channel	Savings Replication	Desk Review	Savings Verification	NTG Ratio Update	Benefit-Cost Analysis
HEEP					
RSOL	✓	✓	✓	✓	✓
LivingWise		✓	✓		✓
Res HVAC	✓	✓	✓		✓
CPS	✓	✓	✓		✓
PE-NHC		✓			✓
WRAP					
WRAP	✓	✓	✓		✓
CEEP					
C&I Solutions		✓	✓	✓	✓
SAGE		✓	✓	✓	✓
SBDI		✓	✓		✓
Midstream	✓	✓	✓	✓	✓
CEI		✓			✓
C&I HVAC	✓	✓	✓	✓	✓

As applicable, we developed a sampling plan to efficiently execute each analysis while maintaining a +/- 10% error margin at a 90% confidence level. For activities that require customer interaction, such as surveys, interviews, and onsite, we reviewed the selected sample with OG&E staff to ensure that

participants are not currently included in other OG&E surveys (i.e., avoid survey fatigue). We include detailed descriptions of the sample design in Appendix B.

Evaluated Gross Savings

For all programs and channels, AEG conducted some combination of the following impact activities to produce evaluated gross savings and the corresponding gross realization rate.

Savings replication, performed at the census level, duplicated the savings from the tracking database and ensured that claimed savings estimates, associated inputs, and assumptions were correct and reasonable. Savings replication included the following two steps:

- We reviewed OG&E's program tracking database to verify the accuracy of input assumptions and savings calculations and confirm that the database covers an appropriately comprehensive suite of project information, focusing on required data fields for the verification. We ensured that the necessary data was available to facilitate the most accurate estimates of program savings.
- We replicated the savings using the current AR TRM or other approved documentation (e.g., a different state's TRM, ENERGY STAR, etc.) to calculate savings for the population of deemed and semi-prescriptive measures and services in the program tracking database.

Engineering desk reviews, performed on a sample of participants, checked the accuracy of input variables, model numbers, and other project-specific information in the backup documentation for a sample of applications or projects. Desk reviews can be "simple" or "complex," which are described as follows:

- Engineering Algorithm Review (Simple). For prescriptive or semi-prescriptive measures, we requested all backup documentation for a representative sample of participants. Based on the documentation provided, we completed a more thorough review of the impacts, including verification of model numbers, measure counts, and other algorithm inputs.
- Engineering Algorithm Review (Complex). For custom measures or complex semi-prescriptive measures, we conducted a detailed review of the savings approaches and calculations to confirm or adjust savings. This activity may include some or all of the following:
- Review of project-level M&V plans, as available, to ensure that the savings calculations are consistent with any plans,
- Review of detailed project documentation, which may include pre-implementation and post-implementation data collected during project-level M&V,
- Primary or secondary research to inform the savings analysis, and
- Incorporation of data collected from onsite verification activities.

Verification activities, performed on a sample of participants, use virtual or onsite methods to verify measures/equipment rebates, installation, and operation. Our approach to verification for impact evaluations is as follows:

- **Contact a Sample Participants.** We followed the customer outreach protocol outlined in the EM&V plan, which included OG&E and Implementer coordination. The protocol focused on managing customer survey fatigue, communicating AEG's affiliation with OG&E, and improving participant response rates.
- **Develop Site-Specific EM&V Plans.** We developed site-specific or measure-specific data collection plans to account for the need for various measures and corresponding verification methods for different sample points. As part of the development process, AEG verified the project scope and supporting documentation's completeness to determine the necessary supplementary information. The review included measure types/classification, measure baselines, savings estimation methodology and assumptions, and M&V plans. The plans included the following elements:
- **Virtual verification (phone/email)** for simple verification of prescriptive measure sites, and

- **Onsite verification (in-person)** for the complex sites with custom measures.
- **Virtual Verification Process.** For residential and prescriptive/semi-prescriptive measures, we performed virtual (phone/email) verification activities. Participants were asked to verify the installation and critical aspects of incentivized equipment and measures. The types of data collected will depend on the installed measures but are likely to include:
    - Counts of lamps, fixtures, or other efficient equipment installed by type,
    - Photographs of installed EE equipment,
    - Photographs of equipment nameplates,
    - Supplemental trend data from BAS or SCADA systems, and
    - Manufacturer's specification sheets for installed equipment.
- **Onsite Verification Process.** For custom and whole building projects, we performed in-person or onsite verification activities, which included some or all of the following:
    - Verified that equipment is operating correctly and recorded model numbers and efficiencies (in addition to all the same information as discussed for Virtual Verification),
    - Confirmed the fuel used and other pertinent information, including (1) verifying utility meters that serve the building and recording meter numbers, (2) verifying any calculation inputs that are required to evaluate the energy savings, (3) verifying baseline and efficient case parameters used in the building simulation models, and (4) verifying building construction permit and completion dates,
    - For measures with very high savings, measures with considerable uncertainty in their assumptions, custom engineering analyses, and complex projects that need more detailed data collection and analysis:
    - Obtained screenshots of the building's energy management system or control system,
    - Obtained trend data from the building's energy management system and any submeter data available from the site, and
    - Verified parameters used in the building simulation model, including building occupancy and equipment operation schedules, equipment sizes and efficiencies, details of equipment control systems, and building geometry and construction characteristics.

For Onsite Verification, the EM&V plans also included the following guidelines:

- General safety procedures and guidelines, including tools and PPE guidelines, and
- Onsite verification training.

Evaluated Net Savings

AEG recommended a once-per-cycle prospective update of the NTG ratio used to derive the evaluated net savings from the evaluated gross savings. In other words, the PY2022 evaluation used the 2021 NTG ratios for channels that did not receive a NTG update in 2022. The Res HVAC, PE-NHC and C&I HVAC channels received NTG updates in 2022 and those results are applied to the evaluated gross savings.

- **NTG Ratio Update.** We used a survey-based approach for programs/channels updated in 2023. This self-report approach (surveys and interviews) started with gross estimates of savings adjusted for NTG factors, such as savings (1) from free riders, participants not influenced by the program, and (2) from spillover, nonparticipants influenced by the program, but savings were not reported. We discuss program/channel-specific surveys in respective program/channel sections.

Cost-Effectiveness

We calculated the cost-effectiveness of OG&E's programs based on OG&E's reported total spending, evaluated energy and demand savings, measure inputs, and OG&E-specific economic inputs. Measure inputs include equipment measure life and participant incremental cost. OG&E-specific economic inputs include avoided costs, discount rates, line losses, etc. Additional inputs included Non-Energy Benefit (NEB) savings associated with water savings, when applicable, and the Oklahoma Utility Earned Incentive.

We used AEG's proprietary BenCost model to evaluate cost-effectiveness. The BenCost model is a transparent and comprehensive program planning and cost-effectiveness tool built in Microsoft Excel that conforms to the fundamental principles of cost-effectiveness economics and is consistent with industry best practices. The specific tests used to evaluate cost-effectiveness are Total Resource Cost Test, Utility Cost Test, Ratepayer Impact Measure Test, Participant Cost Test, and Societal Cost Test. The cost-effectiveness approach and assumptions are detailed in Appendix C.

Process Evaluation Approach

AEG's approach to process evaluations is to provide quantifiable, actionable results that can be replicated over time to measure progress toward the program's goals. Similar to the impact evaluation, we used a combination of activities to produce a customized approach appropriate to each program and channel. Figure A-2 lists the typical evaluation activities performed in a process evaluation. Table A-2 summarizes the process evaluation activities performed for each program and channel. We describe each activity in detail below.

Figure A-2 Process Evaluation Activities

Table A-2 Process Evaluation Activities by Program and Channel

Program/Channel	Program Manager Interview	Implementer Interview	Trade Ally Survey/ Interview	Participant Survey/Interview	Cycle Time Analysis
HEEP					
RSOL	✓	✓		✓	✓
LivingWise	✓	✓			
Res HVAC	✓	✓	✓		
CPS	✓	✓			
PE-NHC	✓	✓		✓	
WRAP					
WRAP	✓	✓	✓		
CEEP					
C&I Solutions	✓	✓	✓	✓	✓
SAGE	✓	✓	✓	✓	✓
SBDI	✓	✓	✓		✓
Midstream	✓	✓	✓	✓	
CEI	✓	✓			
C&I HVAC	✓	✓	✓	✓	✓

AEG's analysis collectively contributes to developing actionable recommendations to capitalize on program strengths, overcome program weaknesses, streamline program data collection and tracking, and increase program key performance indicators (KPIs).

As applicable, we developed a sampling plan to efficiently execute each analysis while maintaining a +/- 10% error margin at a 90% confidence level. For activities that require customer interaction, such as surveys and interviews, we reviewed the selected sample with OG&E staff to ensure that participants are not currently included in other OG&E surveys (i.e., avoid survey fatigue). We include detailed descriptions of the sample design in Appendix B.

Program Manager and Implementer Interviews

AEG conducted in-depth interviews with OG&E implementation staff and third-party implementers enlisted by OG&E that are involved in the day-to-day running of the program. These foundational discussions provide our team with critical context and the program-specific language we need to effectively converse with participants and accurately interpret their feedback. These interviews are also instrumental in determining the KPIs to track for each channel and creating the program scorecards for the evaluation plan.

An experienced AEG analyst or project manager conducted in-depth interviews and identified staff impressions of program implementation activities, program performance, marketing and customer awareness of the program, program data and tracking mechanisms, barriers to increased participation, overall program effectiveness, and opportunities for program improvements. Our experienced interviewers used a flexible approach to the discussion, allowing the respondent to talk about their experiences or perspective while still shaping the discussion to collect critical and relevant information.

Contractor and Trade Ally Interviews

As applicable to each program and channel, we interviewed participating contractors and Trade Allies who provide various installation and audit services. In these interviews, we captured information about the areas where our prior research has indicated barriers/challenges to the programs. The possible topics the interviews could address are program awareness, the effectiveness of program marketing, the need and availability of training, drivers of participation, barriers to participation, program satisfaction, and benefits. Additionally, these interviews could elicit interest in new program activities or determine items such as the marketing support desired by Trade Allies.

Participant/Nonparticipant Surveys and In-depth Interviews

AEG recommended a once-per-cycle cadence for conducting participant interviews. Under a separate engagement in 2022, AEG conducted a market evaluation that included surveys with nonparticipants. For that reason, we did not conduct additional nonparticipant surveys. AEG will work with OG&E to identify if nonparticipant surveys are necessary for the PY2024 evaluation.

Participant data collection is conducted primarily to understand the participant experience with OG&E's programs. AEG determined the appropriate medium (surveys and/or in-depth interviews) depending on the number and type of participants. We focused the surveys and interviews on:

- How participants became aware of programs,
- How they learned about the program,
- Why they signed up for the program,
- Experience signing up, including the wait time,
- The assessment experience or interactions with contractors for some programs,
- Satisfaction with the program, inducements, and measures installed,
- Attitudes toward EE,
- Information sources used when making purchasing decisions,
- Verification of direct install measures, including persistence,
- Net-to-gross battery,
- Likelihood of installing additional measures and technologies,

- Barriers to installing additional measures and technologies,
- Recommendations for program improvement,
- Challenges due to COVID-19,
- Relevant demographics, including the age of home, and
- Opportunities to improve program delivery/their experience.

AEG worked collaboratively with OG&E for both mediums to design surveys and interview prompts. AEG also worked collaboratively with OG&E staff and third-party implementers to identify the best approach to fielding surveys and scheduling interviews:

- Survey invitations were sent to valid email addresses, prompting participants to complete an online survey.
- In-depth interviews were conducted over the phone.

Cycle Time Analysis

Using tracking data and the participant survey/interview results, we calculated the typical time required for a participant to move through the key stages of participation. We then used the participant surveys or interviews to identify key points of attrition or stages where participants "fall out" of the process. We provide a graphical representation of the typical customer participation process and annotate the timeline with information from other process tasks, which will help OG&E understand when and why participants drop out and the points at which delays occur.

B | SAMPLE DESIGN AND EXTRAPOLATION

We developed a sampling plan to efficiently and cost-effectively execute each analysis while maintaining a +/- 10% error margin at a 90% confidence level (90/10) at the program level. For the 2023 evaluation, we analyzed the participant population necessary for each program/channel and determined if a sampling approach was necessary for these activities: Desk Reviews, Verification, and Participant Surveys.

Table B-1 identifies with a check mark (✓) the activities that required a sampling approach by program and channel. Activities with "c" indicate a census sampling approach.

Table B - 1 Evaluation Activity Sampling by Program and Channel

Program/Channel	Desk Review	Verification	Participant Survey
HEEP			
RSOL	✓	✓	✓
LivingWise[10]	*	*	n/a
Res HVAC	c	✓	n/a
CPS	c	n/a	n/a
PE-NHC	✓	n/a	✓
WRAP			
WRAP	✓	✓	n/a
CEEP			
C&I Solutions	✓	✓	✓
SAGE	✓	✓	✓
SBDI	✓	✓	n/a
Midstream	✓	✓	✓
CEI	c	c	n/a
C&I HVAC	✓	✓	n/a

We used the following approach to sample design:

- **Reviewed the program data,** focusing on the population distribution in each tracking database across measures, reported savings, and other metrics (e.g., home type, heating fuel type, etc.) as relevant to ensure that we build an efficient sampling plan specific to projects and customers in the current evaluation year.
- **Determined whether sampling** is required to complete the impact evaluation activities. Some activities, such as savings replication, did not require a sampling plan.
- **Stratified the project population** based on the program data review and evaluation goals. We determined a stratification approach based on each program/channel's participant population, delivery stream, measure category, or claimed savings bins as needed.
- **Selected an appropriate and efficient sampling approach within each stratum** depending on the distribution of participation and claimed savings: census v. sample.
- **Determined the recommended sample size for each stratum.** We used an 85/15 assumption within each stratum to achieve 90/10 at the program level. We also assumed a coefficient of variation (CV) of 0.50 since we did not have access to error ratios from the previous evaluation. These assumptions

[10] The LivingWise sample consisted of students that completed the HEW. AEG did not design a separate sample for this channel.

mitigate the risk that we under-sample or over-sample strata and fail to meet or far exceed confidence and precision targets.

We worked closely with OG&E project staff to develop reasonable and efficient sample plans that meet their needs for the evaluation. For activities requiring customer interaction, such as onsites, surveys, and interviews, we reviewed the selected sample with OG&E staff to ensure that participants are not included in other OG&E surveys (i.e., avoid survey fatigue).

Sample Design Summary

The following tables present the sample design executed in 2023 and the achieved CVs around evaluated savings. We will use our findings to provide insights about any substantial deviations from confidence and precision targets that can be incorporated into future sample plans.

We show the **achieved relative precision and CV for evaluated gross energy savings (kWh)** for conservative reporting purposes. The precision and CV associated with demand (kW) are slightly lower.

Table B-2 shows the sample design summary for HEEP. Please note the following:

- Population counts are in number of homes except for CPS, which shows the number of rebated measures.
- For HEEP, the sample design achieved an overall +/- 0.29% error margin at a 90% confidence level (90/10).

Table B - 2 HEEP Sample Design Summary

Channel/Stratum	Population Count	Desk Review			Verification/Participant Sample			Rel. Prec. (90%)
		Sample Count	Rel. Prec. (90%)	Achieved CV	Sample Count	Rel. Prec. (90%)	Achieved CV	
RSOL – Multifamily	2,002	16	8.13%	0.049	n/a	n/a	n/a	8.13%
RSOL – Single Family	2,158	23	6.42%	0.039	511	7.35%	0.022	7.35%
LivingWise	8,811	1,344	7.97%	0.034	n/a	n/a	n/a	7.97%
Res HVAC – Tune Up	2,762	n/a	n/a	n/a	220	1.24%	0.008	1.24%
Res HVAC – ROB	286	n/a	n/a	n/a	24	0.00%	0.000	0.00%
CPS	8,696[11]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
PE-NHC	1,347	16	1.29%	.008	n/a	n/a	n/a	1.29%
Overall HEEP								**0.29%**

Table B-3 shows the sample design summary for WRAP. Please note the following:

- Population counts are in number of homes.
- Multifamily – Gas has 100% ISR (Verification), and thus has no measured precision and CV.
- For WRAP, the sample design achieved an overall +/- 0.90% error margin at a 90% confidence level.

[11] Number of rebated measures

Table B - 3 WRAP Sample Design Summary

Stratum	Population Count	Desk Review			Verification/Participant Sample			Rel. Prec. (90%)
		Sample Count	Rel. Prec. (90%)	Achieved CV	Sample Count	Rel. Prec. (90%)	Achieved CV	
Multifamily – Electric	711	12	1.38%	0.008	62	10.85%	0.066	1.38%
Multifamily - Gas	114	12	0.80%	0.005	31	0.00%	0.000	0.87%
Single Family - Electric	511	12	1.11%	0.007	165	7.26%	0.044	1.11%
Single Family – Gas	1,998	12	2.15%	0.013	628	1.69%	0.100	2.18%
Overall WRAP	**3,334**							**0.90%**

Table B-4 shows the sample design summary for CEEP. Please note the following:

- Population counts reflect number of projects except for Midstream (number of invoices).
- All strata that had a census sampling approach (Population Count = Sample Count) has no measured precision and CV.
- Strata for which AEG planned to conduct on-site verification included desk review verification adjustments. The remaining strata were assumed to have 100% ISRs and thus had no measured precision and CV.
- For CEEP, the sample design achieved an overall +/- 1.81% error margin at a 90% confidence level.

Table B - 4 CEEP Sample Design Summary

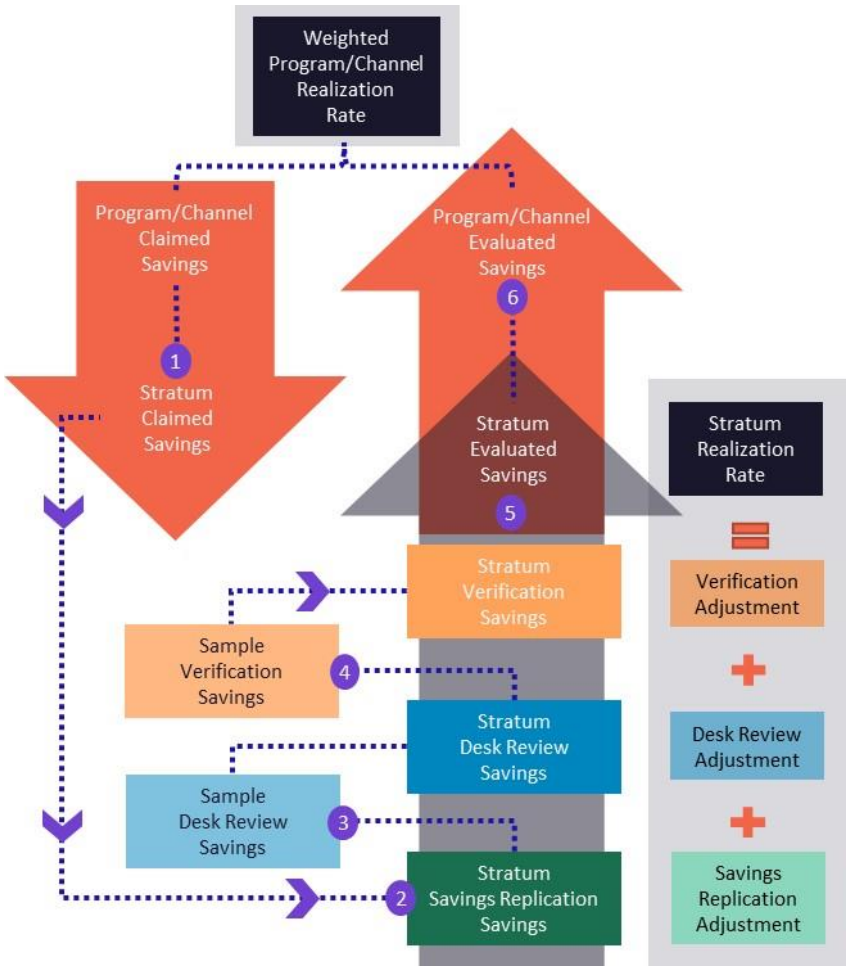
Channel/Stratum	Pop. Count	Desk Review			Verification/Participant Sample			Rel. Prec. (90%)
		Sample Count	Rel. Prec. (90%)	Achieved CV	Sample Count	Rel. Prec. (90%)	Achieved CV	
CIS – Custom – Top 5%	5	4	1.42%	0.009	4	13.38%	0.081	13.45%
CIS – Custom – Hort. Ltg	77	7	7.44%	0.045	7	27.74%	0.169	11.17%
CIS – Custom – All Others	25	6	3.31%	0.020	6	3.88%	0.024	48.06%
CIS – Presc – Ltg Top 5%	4	4	0.00%	0.000	4	0.00%	0.000	0.00%
CIS – Presc – Ltg All Others	772	196	1.00%	0.006	n/a	n/a	n/a	1.77%
CIS – Presc – Non Lighting	45	45	0.00%	0.000	n/a	n/a	n/a	0.11%
SAGE – Lighting Top 5%	2	2	0.00%	0.000	2	0.00%	0.000	0.00%
SAGE – Lighting All Others	55	9	6.46%	0.039	n/a	n/a	n/a	6.46%
SAGE – Non Lighting	12	7	7.63%	0.046	12	0.00%	0.000	14.71%
SBDI – Lighting	3	3	0.00%	0.000	3	0.00%	0.000	0.00%
SBDI – Non Ltg Top 5%	187	8	55.68%	0.339	n/a	n/a	n/a	55.68%
SBDI – Non Ltg All Others	3	3	0.00%	0.000	3	0.00%	0.000	0.00%
Midstream - Lighting - All Others	2,217	14	0.82%	0.005	n/a	n/a	n/a	0.82%
Midstream - Lighting - Top 5%	205	13	0.18%	0.001	n/a	n/a	n/a	0.18%
Midstream - Kitchen - All	54	19	4.58%	0.028	n/a	n/a	n/a	4.58%
CEI	128	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C&I HVAC – Top 5%	189	189	0.00%	0.000	1	0.00%	0.000	0.00%
C&I HVAC – All Others	7	7	0.00%	0.000	6	0.00%	0.000	0.00%
Overall CEEP								**1.81%**

Sample Extrapolation

AEG used the following steps, including Savings Replication, Desk Review, and Verification activities, to inform Channel and Program Evaluated Savings. As noted in Appendix A, we performed each impact

evaluation activity as appropriate to each program and channel. Each activity's realization rate (adjustment) is incremental from each preceding step. Figure B 1 below shows the sequence followed by sample extrapolation. Below we discuss steps 1 to 6 in more detail and define each adjustment and realization rate.

Figure B - 1 Sample Stratification



Stratify Program Savings. As discussed above, AEG reviewed the program data and stratified the population of savings by program, channel, and additional criteria as appropriate to each program/channel.

Savings Replication. AEG completed its audit of the tracking system and re-calculated the claimed savings. We performed this audit at the census level for programs and channels with the appropriate data available. Throughout this report, we refer to the difference between Stratum Claimed Savings and Stratum Savings Replication Savings as Savings Replication Adjustment.

$$\text{Savings Replication Adjustment} = (\text{Stratum Savings Replication Savings})/(\text{Stratum Claimed Savings})$$

Desk Reviews. AEG gathered backup documentation for each sampled project within each program, channel, and stratum and conducted Desk Reviews to determine the sample-verified savings.

a. Within each stratum, AEG used a Ratio Expansion approach to determine the Stratum Desk Review Savings, using the evaluated savings from the previous step (Stratum Savings Replication Savings) as the reference point.

- This approach ensures adjustments are incremental to changes made to the population of claimed savings during Savings Replication (i.e., the Desk Review does not double-count any Savings Replication adjustments).

    b. Throughout this report, we refer to the difference between Stratum Claimed Savings and Stratum Desk Review Savings as Desk Review Adjustment

    $$\text{Desk Review Adjustment} = (\text{Stratum Desk Review Savings} - \text{Stratum Savings Replication Savings})/(\text{Stratum Claimed Savings})$$

Savings Verification. AEG conducted various verification activities (onsite inspections, web-based surveys, and phone surveys) on a sample of participants. AEG collected measure-level in-service rates (ISRs) to determine the sample-verified savings.

c. Again, within each stratum, AEG used a Ratio Expansion approach to determine the Stratum Savings Verification Savings, using the evaluated savings from the previous step (Stratum Desk Review Savings) as the reference point.

- This approach ensures adjustments are incremental to changes made to the population of claimed savings during Desk Reviews.

    d. Throughout this report, we refer to the difference between Stratum Claimed Savings and Stratum Verification Savings as Verification Adjustment

    $$\text{Savings Verification Adjustment} = (\text{Stratum Savings Verification Savings} - \text{Stratum Desk Review Savings})/(\text{Stratum Claimed Savings})$$

Stratum Evaluated Savings. Collectively, the three impact evaluation activities produce the Stratum Evaluated Savings. Similarly, the sum of the three adjustments makes the Stratum Realization Rate.

$$\begin{aligned}&\text{Stratum Realization Rate}\\&= \text{Savings Replication Adjustment} + \text{Desk Review Adjustment} + \text{Verification Adjustment}\\&= (\text{Stratum Evaluated Savings})/(\text{Stratum Claimed Savings})\end{aligned}$$

Aggregate to Channel, Program, and Portfolio Levels. We calculated Channel and Program Evaluated Savings as the sum of Stratum Evaluated Savings. Similarly, we calculated Portfolio Evaluated Savings as the sum of Program Evaluated Savings.

e. To estimate the Weighted Realization Rate for each channel, program, and overall portfolio, AEG divided evaluated savings by claimed savings. Program and portfolio realization rates incorporate all adjustments from Savings Replication, Desk Reviews, and Verification activities.

$$\text{Weighted Program Realization Rate} = (\text{Program Evaluated Savings})/(\text{Program Claimed Savings})$$

C | COST-EFFECTIVENESS ANALYSIS

AEG evaluated the cost-effectiveness of the portfolio and programs based on 2023 costs provided by OG&E and their third-party implementers and the evaluated savings resulted from this evaluation. We provide a brief overview of the approach and the assumptions used in the analysis.

We used AEG's proprietary BenCost model as the primary tool to execute the cost-effectiveness analysis. The BenCost model is a transparent and comprehensive program planning and cost-effectiveness tool built in Microsoft Excel® that conforms to the fundamental principles of cost-effectiveness economics and is consistent with industry best practices. BenCost also has the flexibility to allow for modifications based on OG&E-specific needs.

We used five cost-effectiveness analysis methods among the standard methods used in this industry. All tests weigh monetized benefits against costs. These monetized amounts are presented as Net Present Value (NPV) evaluated over the measures' lifespan. The benefits and costs differ for each test based on the perspective of the test.

- **Total Resource Cost (TRC)** Test evaluates benefits and costs from the perspective of all utility customers (participants and non-participants). The TRC test measures the net costs and benefits of an EE program as a resource option based on the total costs of the program, including both the participant and the utility costs.
- **Program Administrator Cost Test/Utility Cost Test (PACT/UCT)** evaluates benefits and costs from the perspective of the utility, government agency, or third party implementing the program. The PACT/UCT measures the net costs of a program as a resource option based on the costs incurred by the program administrator (utility), excluding any net costs incurred by the participant. The benefits are avoided supply costs of energy and demand as well as the Oklahoma Utility Earned Incentive. The costs are the program costs incurred by the utility and participant inducements.
- **Participant Cost Test (PCT)** evaluates benefits and costs from the perspective of the customer installing the measure. The PCT measures the quantifiable benefits and costs to the customer due to participation in a program. The benefits include a reduction in the participants' bill and inducements received. The costs are out-of-pocket expenses incurred as a result of participation.
- **Ratepayer Impact Measure (RIM)** Test evaluates the impact of efficiency measures on non-participating ratepayers. The RIM test measures the change in customer bills or rates due to changes in utility revenues and operating costs. Benefits are the savings from avoided supply costs of energy and demand. Costs are the program costs incurred by the utility, participant inducements, and decreased utility revenues.
- **Societal Cost Test (SCT)** evaluates benefits and costs to society as a whole. The SCT measures the net costs and benefits of a program as a resource option based on the total costs of the program, including both the participant cost and utility cost and the benefit to society represented by an environmental externality factor.

Analysis Inputs. We calculated the cost-effectiveness of OG&E's programs based on OG&E reported total spending, evaluated energy and demand savings, measure inputs, and OG&E-specific economic inputs.

- Measure inputs include equipment measure life and participant incremental cost.
- OG&E-specific economic inputs include avoided costs, discount rates, line losses, etc.
- Additional inputs included Non-Energy Benefit (NEB) savings associated with water savings, when applicable, as well as the Oklahoma Utility Earned Incentive. Several of the residential programs' measures result in reduced water usage and EE savings. For these measures, we calculated annual water reductions and used the average costs of water ($/gallon) in the OG&E service territory to determine NEB impacts.

Table C-1 summarizes the benefit and cost components included in each test.

Table C-1 Benefits and Costs Included in each Cost-Effectiveness Test

Test	Benefits	Costs
TRC	Energy-related costs avoided by the utility Capacity-related costs avoided by the utility (including generation, transmission, and distribution) Additional resource savings (i.e., natural gas) Non-energy benefits (i.e., water)	Program overhead costs Incremental measure costs
PACT	Energy-related costs avoided by the utility Capacity-related costs avoided by the utility (including generation, transmission, and distribution)	Program overhead costs Utility incentive costs
PCT	Incentive payments Bill Savings	Incremental equipment costs Incremental installation costs
RIM	Energy-related costs avoided by the utility Capacity-related costs avoided by the utility (including generation, transmission, and distribution) Additional resource savings (i.e., natural gas) Non-energy benefits (i.e., water)	Program overhead costs Utility incentive costs Lost revenue due to reduced energy bills Incremental measure costs
SCT	Energy-related costs avoided by the utility Capacity-related costs avoided by the utility (including generation, transmission, and distribution) Additional resource savings (i.e., natural gas) Non-energy benefits (i.e., water)	Program overhead costs Program installation costs Incremental measure costs

The following tables detail the results of each cost-effectiveness test for the programs and portfolio.

Table C-2 Cost-Effectiveness Benefits by Program

Program	TRC	PACT	RIM	PCT	SCT
HEEP	$32,525,634	$31,807,677	$32,525,634	$63,862,149	$43,187,083
WRAP	$17,226,331	$15,299,286	$17,226,331	$31,462,579	$23,801,390
CEEP	$64,743,842	$71,846,336	$64,743,842	$134,799,149	$81,608,877
Energy Education	$0	$0	$0	$0	$0
R&D	$0	$0	$0	$0	$0
Planning	$0	$0	$0	$0	$0
Total Benefits	**$114,495,807**	**$118,953,299**	**$114,495,807**	**$230,123,877**	**$148,597,349**

Table C-3 Cost-Effectiveness Costs by Program

Program	TRC	PACT	RIM	PCT	SCT
HEEP	$13,317,119	$11,477,421	$68,479,819	$8,326,691	$8,326,691
WRAP	$6,072,874	$6,072,874	$32,986,080	$5,374,868	$5,374,868
CEEP	$30,194,155	$18,197,050	$148,182,555	$21,809,063	$21,809,063
Energy Education	$832,653	$832,653	$832,653	$0	$832,653
R&D	$1,868,317	$1,868,317	$1,868,317	$0	$1,868,317
Planning	$76,826	$76,826	$76,826	$0	$76,826
Total Costs	**$52,361,945**	**$38,525,142**	**$252,426,250**	**$35,510,622**	**$38,288,418**

Table C-4 Cost-Effectiveness Net Benefits by Program

Program	TRC	PACT	RIM	PCT	SCT
HEEP	$19,208,515	$20,328,190	-$35,954,185	$55,535,458	$34,860,392
WRAP	$11,153,458	$9,225,713	-$15,759,749	$26,087,712	$18,426,522
CEEP	$34,549,686	$53,642,427	-$83,438,713	$112,990,086	$59,799,813
Energy Education	-$832,653	-$832,653	-$832,653	$0	-$832,653
R&D	-$1,868,317	-$1,868,317	-$1,868,317	$0	-$1,868,317
Planning	-$76,826	-$76,826	-$76,826	$0	-$76,826
Total Net Benefits	**$62,133,862**	**$80,428,158**	**-$137,930,444**	**$194,613,255**	**$110,308,931**

D | NET-TO-GROSS ANALYSIS

The PY2023 net-to-gross (NTG) analysis consisted of conducting surveys for four channels: RSOL, CIS, SAGE and Midstream. AEG made considerable efforts to remain consistent with previous survey-based approaches to establish appropriate comparisons to prior NTG ratios. An outline of the methodology used for each channel is provided below.

RSOL

For Residential Solutions, AEG used several criteria to determine the likelihood that a participant was a free rider. The final free ridership was calculated as follows:

$$\text{Free Ridership} = \text{Intent} * \textit{average}(\text{Plans, Likelihood}) * \text{Timing}$$

The first criterion, **Intent**, was based on a participant's financial ability to pay for efficient measures:

> *Would you have been able to make the financial investment to purchase new energy-efficient {MEASURE}s if they were not provided through OG&E's Residential Solutions Program?*

- Respondents who reported they were unable to afford the efficiency measure without a rebate were deemed not to be free riders and assigned an *Intent* score of 0.
- For all others, AEG assigned an *Intent* score of 1 and asked an additional series of questions to gauge each respondent's prior *Plans* to implement the measure, the *Likelihood* they would have implemented the measure without the channel, and the effect of the channel on the likely *Timing* of the implementation of the measure:

> *Before learning about the Residential Solutions Program, did you already have plans to install new energy-efficient {MEASURE}s?*

AEG assigned *Plans* scores of 1 according to the following criteria. Responses that did not meet these criteria were assigned Plans scores of 0:

- Respondents who answered "Yes" to the first question
- Respondents who answered "Yes" to the first question and "No" to the second question.

AEG then assessed respondents' *Likelihood* of implementing the measure in the absence of the channel:

> *Using a scale from 1 (not at all likely) to 5 (very likely), how likely is it that you would have purchased the same energy-efficient {MEASURE}(s) if you did not receive them through the Residential Solutions Program?*

Based on the responses to the question above, AEG assigned a *Likelihood* score as follows:

- 1 (Not at all likely) = 0
- 2 =.25
- 3 =.5
- 4 =.75
- 5 (Very likely) = 1

AEG then assessed the channel's effect on the *Timing* of implementation:

> *When would you have purchased the same energy-efficient {MEASURE}(s) if you had not participated in the Residential Solutions Program?*

Based on the responses to the questions above, AEG assigned a *Timing* score as follows:

- If the respondent answered "No" to the first question, AEG assigned a Timing score of 0.
- If the respondent answered "Yes" to the first question, then:

- If the respondent answered "zero to six months" for the second question, AEG assigned a *Timing* score of 0.5.
- If the respondent answered "seven to 12 months" for the second question, AEG assigned a *Timing* score of 0.25.
- If the respondent answered "more than one year" for the second question, AEG assigned a *Timing* score of 0.

CIS

For C&I Solutions the following approach was used to determine the channel's NTG ratio.

When determining the NTG score, the **first criterion** was based on the response to the following question in the participant survey:

> *"Would you have made the financial investment to purchase {MEASURE} if they were not rebated through OG&E's CIS Program?"*

- Customers who answered "no" were not deemed free riders.

The **second criterion** was the impact of the channel on the timing of the decision to implement the EE measure. The AR TRM stipulates a decision-maker who would have installed a measure within one year for full free ridership. AEG determined customers were not free riders if they stated that they would have installed a measure in more than one year.

Specifically, respondents were asked the following questions:

> *"Did you purchase the {MEASURE} sooner than you would have if the program rebates had not been available?"*
>
> *"When might you have purchased the same {MEASURE} if you had not participated in the program?"*

- Respondents who answered "yes" to the first question and indicated that they would have installed the measure one or more years later in the second question were deemed not to be free riders.

The **third criterion** applied only to respondents who said they would have made the financial investment to purchase the measure and would have done so within one year of when they undertook it. Two factors were analyzed to determine the likelihood of free ridership. Specifically, this required determining if a participant stated they intended to purchase the measure even without the Program.

- The respondent answered, "yes" to the following question:

> *"Before learning about the program, did you have plans install {MEASURE}?"*

- The respondent answered, "very likely" to the following question:

> *"Using a scale where 1 means not at all likely and 5 means very likely, how likely is it that you would have purchased the same {MEASURE} if the program was not available?"*

  - If both these criteria were met the respondent was considered a free rider.

SAGE

This section describes the process for determining NTG for the SAGE channel. Questions were asked to all survey respondents unless noted otherwise.

When determining the NTG score, the first criterion was based on the response to the following question in the participant survey:

> *"Would you have made the financial investment to purchase {MEASURE} if they were not rebated through OG&E's SAGE Program?"*

- Customers who answered "no" were not deemed free riders.

The second criterion was the impact of the channel on the timing of the decision to implement the EE measure. The AR TRM stipulates a decision-maker who would have installed a measure within one year for full free ridership. AEG determined customers were not free riders if they stated that they would have installed a measure in more than one year.

Specifically, respondents were asked the following questions:

> *"Did you purchase the {MEASURE} sooner than you would have if the program rebates had not been available?"*
>
> *"When might you have purchased the same {MEASURE} if you had not participated in the program?"*

- Respondents who answered "yes" to the first question and indicated that they would have installed the measure one or more years later in the second question were deemed not to be free riders.

The third criterion applied only to respondents who said they would have made the financial investment to purchase the measure and would have done so within one year of when they undertook it. Two factors were analyzed to determine the likelihood of free ridership.

- Specifically, this required determining if a participant stated they intended to purchase the measure even without the Program.
- The respondent answered, "yes" to the following question:

> *"Before learning about the program, did you have plans install {MEASURE}?"*

- The respondent answered, "very likely" to the following question:

> *"Using a scale where 1 means not at all likely and 5 means very likely, how likely is it that you would have purchased the same {MEASURE} if the program was not available?"*
>
> - If both these criteria were met the respondent was considered a free rider.

Midstream

The remainder of this section describes the process for determining NTG Questions were asked to all survey respondents unless noted otherwise.

When determining the NTG score, the **first criterion** was based on the response to the following question in the participant survey:

> *"Would you have made the financial investment to purchase {MEASURE} if they were not rebated through OG&E's Midstream Program?"*

- Customers who answered "no" were not deemed free riders.

The **second criterion** was the impact of the channel on the timing of the decision to implement the EE measure. The AR TRM stipulates a decision-maker who would have installed a measure within one year for full free ridership. AEG determined customers were not free riders if they stated that they would have installed a measure in more than one year.

Specifically, respondents were asked the following questions:

> *"Did you purchase the {MEASURE} sooner than you would have if the program rebates had not been available?"*
>
> *"When might you have purchased the same {MEASURE} if you had not participated in the program?"*

- Respondents who answered "yes" to the first question and indicated that they would have installed the measure one or more years later in the second question were deemed not to be free riders.

The **third criterion** applied only to respondents who said they would have made the financial investment to purchase the measure and would have done so within one year of when they undertook it. Two factors were analyzed to determine the likelihood of free ridership.

- Specifically, this required determining if a participant stated they intended to purchase the measure even without the Program.
- The respondent answered, "yes" to the following question:

  "Before learning about the program, did you have plans install {MEASURE}?"
- The respondent answered, "very likely" to the following question:

  "Using a scale where 1 means not at all likely and 5 means very likely, how likely is it that you would have purchased the same {MEASURE} if the program was not available?"
  - If both these criteria were met the respondent was considered a free rider.

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7.2 Marketing Materials

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Verified by

Date

Your home has been verified to meet the strict energy efficiency guidelines set by the OG&E Positive Energy Home program.

OG&E®

We Energize Life

OG&E POSITIVE ENERGY HOME

OKLAHOMA

BUILT FOR EFFICIENCY. **DESIGNED FOR LIFE.**

The way your home is built can make a huge difference to your monthly energy bill. That's why OG&E Positive Energy® Homes are built from the ground up to meet our high standards for quality, comfort and energy efficiency. See the difference for yourself during this spring's Parade of Homes.

To learn more or find a Positive Energy Home builder in your area, please email

ogepositiveenergyhomes@clearesult.com.

2023 COHBA PARADE OF HOMES SPRING FESTIVAL

APRIL 21–23 AND APRIL 28–30

DOWNTOWN

Wheeler District
Wheeler Home
(405) 697-0206
1832 Oso Avenue

Wheeler Home
(405) 697-0206
1913 Pioneer Street

EAST

Broadmoore Heights
Homes by Taber
(405) 285-5105
2800 Heather Haven

The Waters
Homes by Taber
(405) 285-5105
3441 Superior Drive

EDMOND

Lone Oak North
Homes by Taber
(405) 285-5105
16224 Verbena Circle

Prairie Meadows
Homes by Taber
(405) 285-5105
13815 Saltgrass Drive

The Springs at Valencia
Landmark Fine Homes
(405) 400-8616
2308 NW 179th Street

NORMAN

The Vineyard
Landmark Fine Homes
(405) 400-8616
2309 NW 179th Street

Carrington Lakes
Landmark Fine Homes
(405) 400-8616
2310 NW 179th Street

NORTHWEST

Shenandoah Ridge
Boevers Homes
(405) 413-7793
4470 Makenzie Trail

Pennbrooke
Home Creations
(405) 364-9999
8625 NW 77th Street

Northwood Village
Home Creations
(405) 364-9999
12661 NW 137th Street

Britton Farms
Homes by Taber
(405) 285-5105
9221 NW 92nd Terrace

Council Ridge
Homes by Taber
(405) 285-5105
16416 Marsha Drive

The Cove at Nichols Creek
Homes by Taber
(405) 285-5105
9109 NW 115th Terrace

Northwood Village
Mirage Homes
(405) 735-1114
13824 Village Cove

Chapel Creek
Vesta Homes
(405) 317-6619
8524 NW 109th Terrace

SOUTHWEST

Apple Estates
1st Oklahoma Homes
(405) 701-5557
4101 Central Park Drive

The Preserve at Parkside
Landmark Fine Homes
(405) 400-8616
2311 NW 179th Street

The Springs at Native Plains
Landmark Fine Homes
(405) 400-8616
2312 NW 179th Street

WEST

Crystal Hill Estates
1st Oklahoma Homes
(405) 701-5557
4816 Quartz Ridge Drive

Canyons
Homes by Taber
(405) 285-5105
10533 SW 52nd Street

Scissortail Crossing
Homes by Taber
(405) 285-5105
12449 SW 30th Street

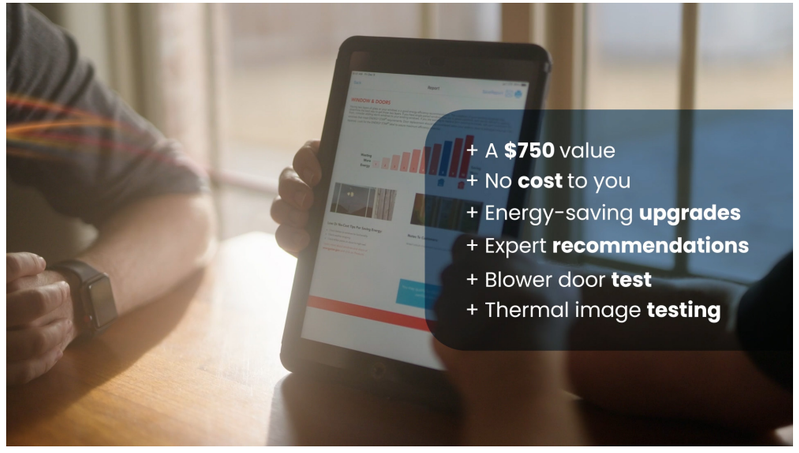
Prairie Estates
Landmark Fine Homes
(405) 400-8616
2313 NW 179th Street

OG&E®
We Energize Life

OGE.com

OG&E
We Energize Life

YouTube Ad 1: Benefits V1

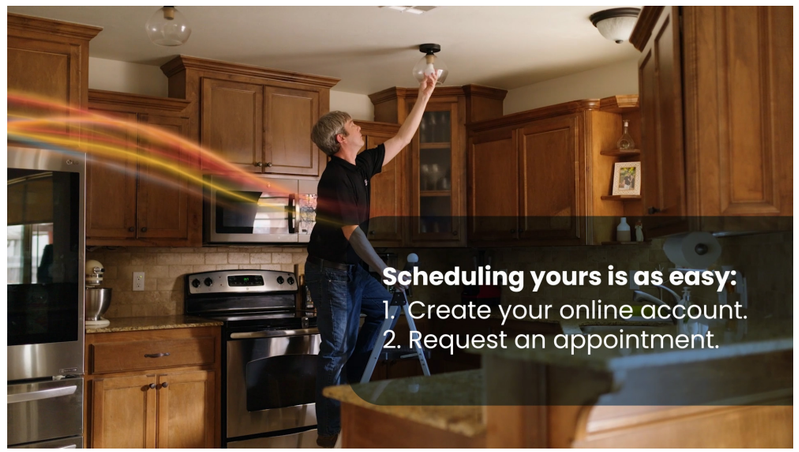


YouTube Ad 1: Benefits V2

0323-OGEOK-RES-3452997-YouTube Ads

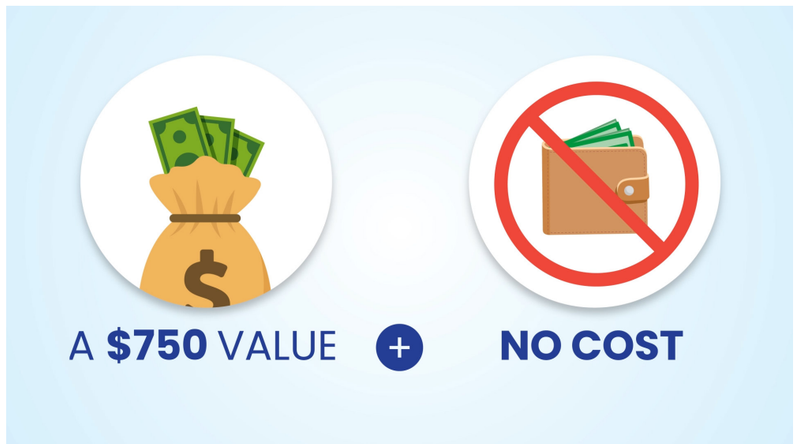
OG&E
We Energize Life

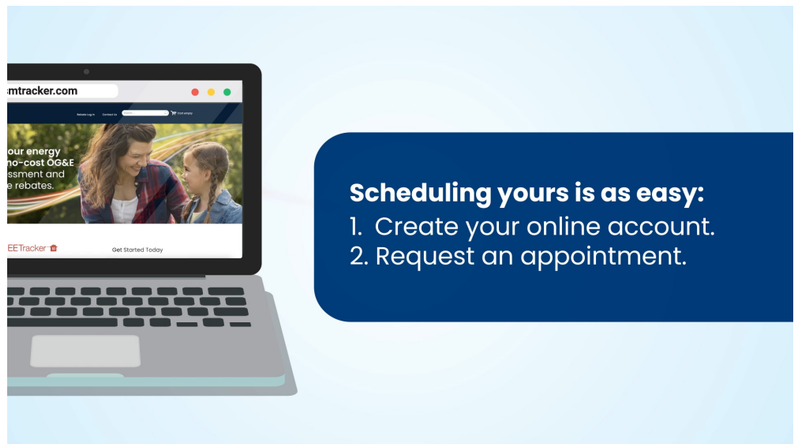
YouTube Ad 2: How To V1



OG&E
We Energize Life

YouTube Ad 2: How To V3





0323-OGEOK-RES-3452997-YouTube Ads

SAY HELLO TO
THE EASY WAY TO SAVE.

Trying to save energy? Our In-Home Energy Assessment is a smart place to start. Valued at $750, this comprehensive assessment is available with no out-of-pocket costs.

SCHEDULE NOW

Schedule yours today to receive:

- An in-home assessment from a certified Energy Advisor
- Blower door and thermal imagery tests to pinpoint air leaks
- A custom report outlining recommendations and available rebates
- LEDs, advanced power strips and other energy-saving upgrades

There's never been an easier time to save. Book your appointment online today.

SCHEDULE NOW

OG&E®

We Energize Life

Download the OG&E App.

Pay your bills, manage your enrollments, get important account information and more!

Download on the App Store

GET IT ON Google Play

Can't see the images? Click here to see what you're missing.

SAY HELLO TO **THE EASY WAY TO SAVE.**

Trying to save energy? Our In-Home Energy Assessment is a smart place to start. Valued at $750, this comprehensive assessment is available with no out-of-pocket costs.

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- A custom report outlining recommendations and available rebates
- LEDs, advanced power strips and other energy-saving upgrades

There's never been an easier time to save. Book your appointment online today.

SCHEDULE NOW

OG&E®

We Energize Life

Download the OG&E App.

Pay your bills, manage your enrollments, get important account information and more!

Download on the App Store

GET IT ON Google Play

OG&E®

We Energize Life

CERTIFICATE OF ACHIEVEMENT

Awarded to

_____

for making a difference in your community
by successfully completing the LivingWise® Program.

Diane Sumner

Diane Sumner, Ed.D., Director of Education

LIVINGWISE® PROGRAM

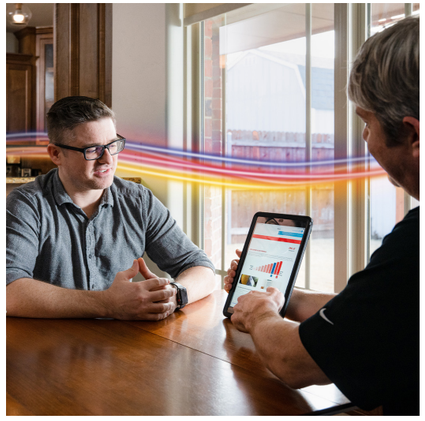
3028

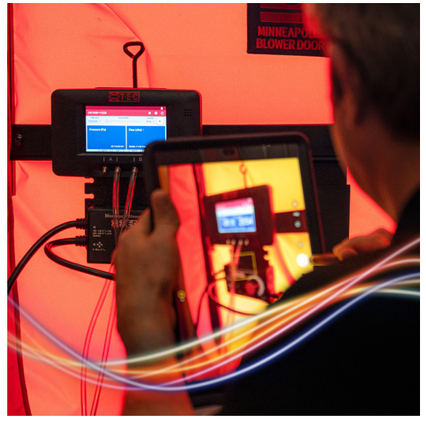
AD 1: DYNAMIC – EVERGREEN

Meta Dynamic Creative Description

Dynamic creative helps advertisers automatically deliver high-performing combinations of their creative assets to their audiences. Dynamic creative accepts the basic components of a Meta ad (image, video, title, description, etc.) and automatically generates optimized ad combinations based on these components. These ads are then served across placements to explore the performance of each creative element within the given audience.

STATIC IMAGES





VIDEOS

Primary text (125 char. before cutoff):

- Saving energy is as easy as one, two or three. Choose from three easy Home Energy Assessment options at no added cost to you.
- Virtual, Standard or Plus? No matter which assessment option you choose, our Energy Advisors are ready to help you save.
- Schedule one of three assessment options to get up to $750 in energy-saving products and expertise for no out-of-pocket cost.
- Our new Home Energy Audit Plus provides up to $750 in energy-saving tests, recommendations and upgrades for no added cost.
- See how your home's energy use stacks up with a HEETracker energy assessment. Take a quick online Home Review to get started.

Headlines (40 char. max.):

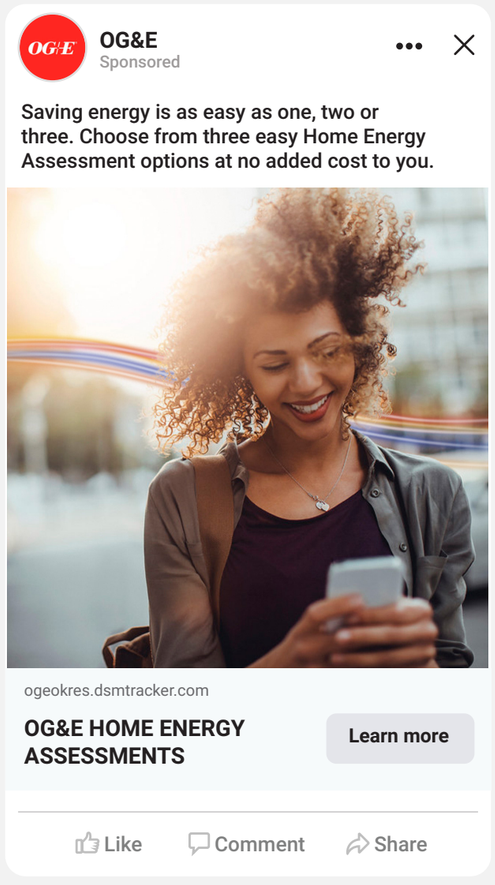
- OG&E HOME ENERGY ASSESSMENTS
- UP TO A $750 VALUE AT NO ADDITIONAL COST
- THREE EASY APPOINTMENT OPTIONS
- CHOOSE FROM VIRTUAL, STANDARD OR PLUS.
- SCHEDULE YOUR ASSESSMENT ONLINE TODAY.

CTA Options

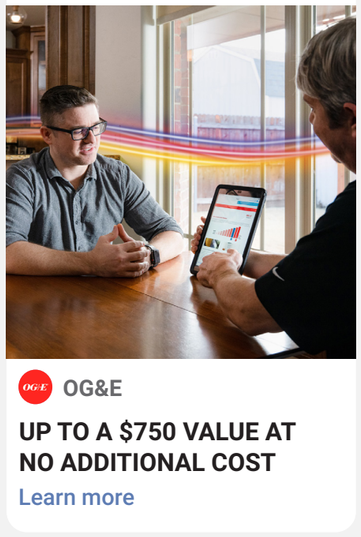
- Book Now
- Sign Up
- Learn More
- Request Time

Destination URL:
ogeokres.dsmtracker.com

Facebook
Feeds



Facebook
Marketplace



Facebook
Stories

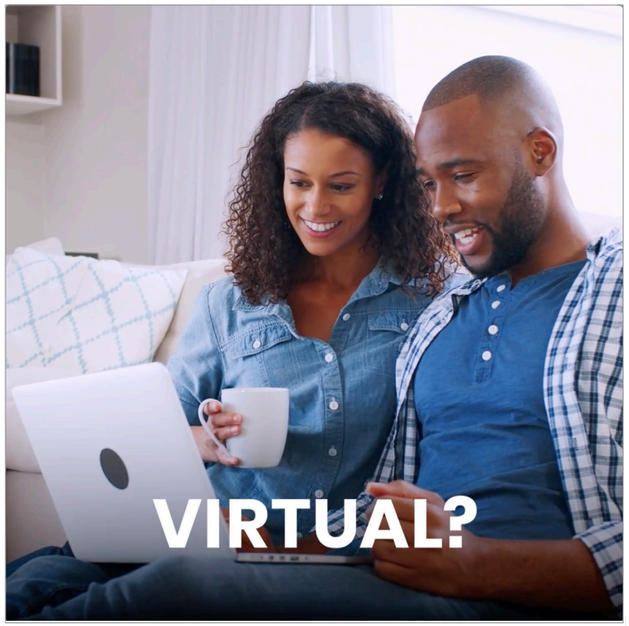
Meta Dynamic Ads: Up to 10 images, 5 headlines, 5 descriptions (optional) and 5 primary text where Meta's API automatically delivers high-performing combinations of their creative assets to their audiences.

For Placement Only Examples

AD 2: MOTION GRAPHIC – SUMMER V1

OG&E
Sponsored

Save all summer and beyond with three energy assessment options valued at up to $750—all available at no added cost to you.

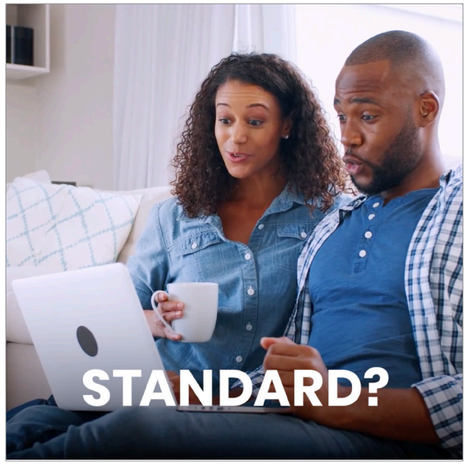


SUMMER SAVINGS START HERE.
OGEOKRES.DSMTRACKER.COM
Book Now

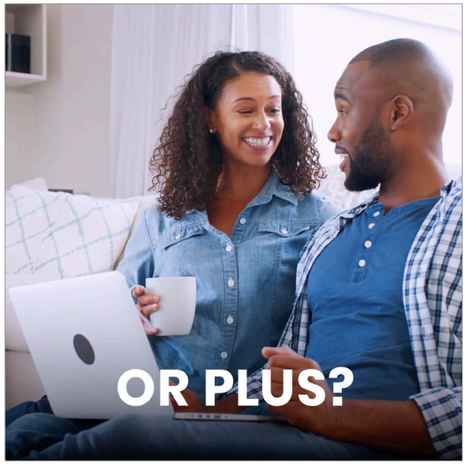
20 10 Comments 250 Shares

Like Comment Share

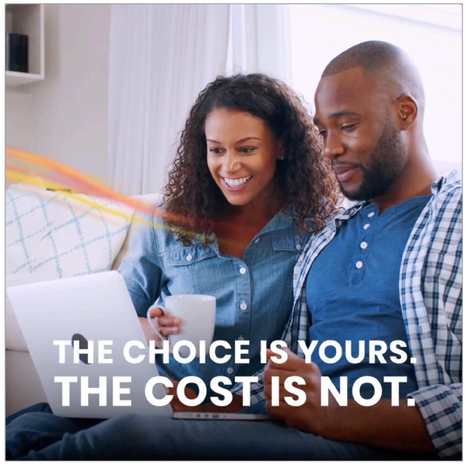
FRAME 2



FRAME 3



FRAME 4



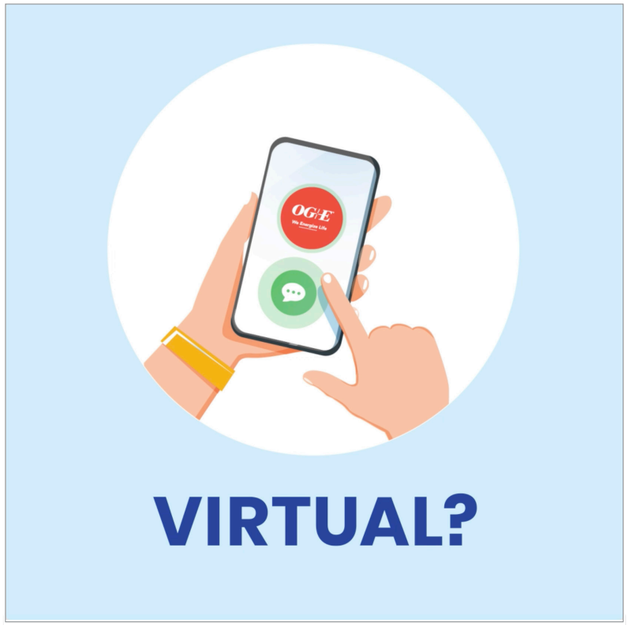
FRAME 5

0323-OGEOK-RES-3453267-Facebook Campaign

AD 2: MOTION GRAPHIC – SUMMER V2

OG&E
Sponsored

Save all summer and beyond with three energy assessment options valued at up to $750—all available at no added cost to you.

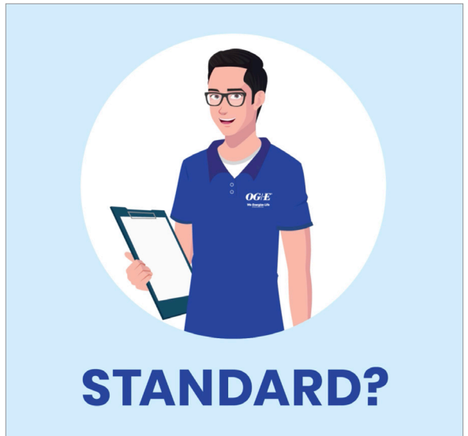


SUMMER SAVINGS START HERE.
OGEOKRES.DSMTRACKER.COM
Book Now

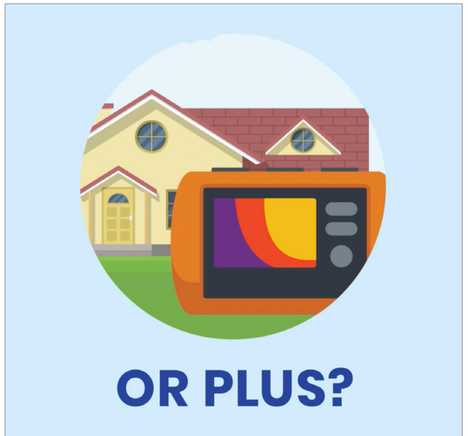
20 10 Comments 250 Shares

Like Comment Share

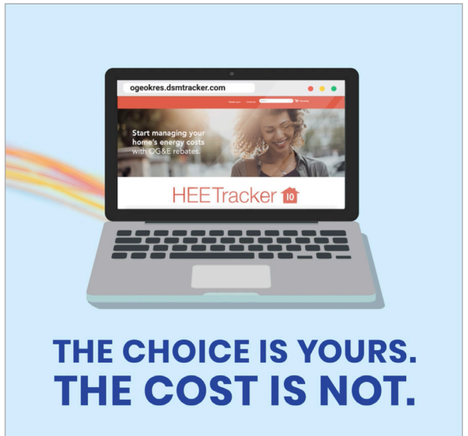
FRAME 2



FRAME 3



FRAME 4



FRAME 5

AD 3: STATIC IMAGE – RETARGETING

OG&E
Sponsored

Assessment appointments are going fast. Book now to get up to $750 in energy-saving products and expertise at no added cost.

THREE EASY CHOICES. ENDLESS SAVINGS.

OGEOKRES.DSMTRACKER.COM

Book Now

20 10 Comments 250 Shares

Like Comment Share

Image Option 2

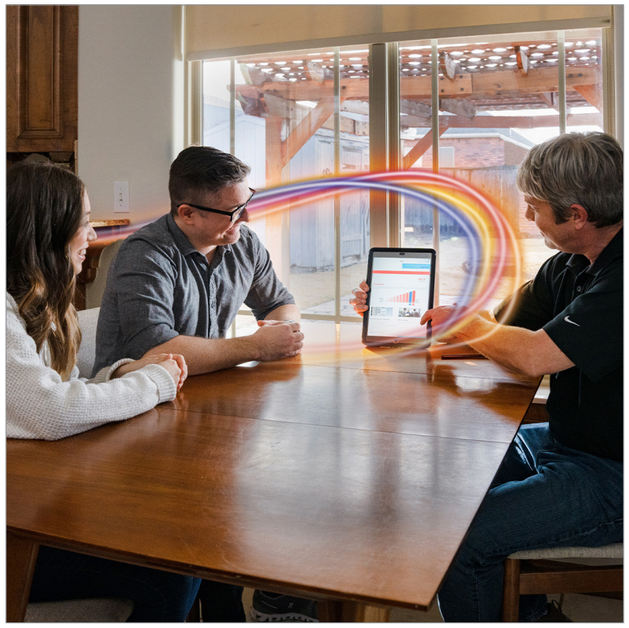
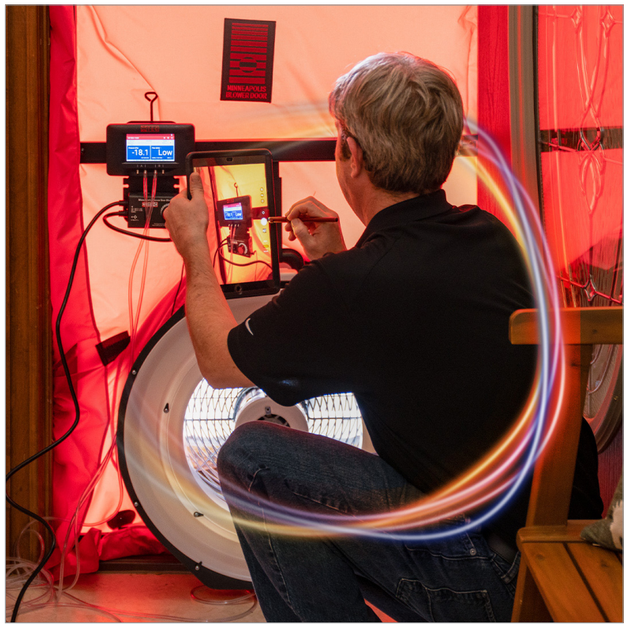


Image Option 3



0323-OGEOK-RES-3453267-Facebook Campaign

DON'T LET TIME RUN OUT

Simply return 80% of your completed surveys by **February 1, 2024**, and you'll receive a **$50.00** Mini Grant for your classroom!

And don't forget to give a wristband reward to your students when they return their completed surveys to you!

Offer open only to teachers participating in the program. Certain restrictions may apply. Good while supplies last. Offer ends February 1, 2024. 80% return rate of completed participant survey forms required for eligibility. For more information call 1-888-GET-WISE or contact us online at www.getwise.org.

PARENTS

OG/E®

We Energize Life

CONGRATULATIONS!

Your child's class has been selected to participate in the exciting LivingWise Program. The program is designed to teach your child the value of water and energy and help you save money on your utility bills. This program is being provided by **Oklahoma Gas & Electric** at NO COST to you, your child's school, or the school district.

The average U.S. household pays at least $2,200 per year in utility bills and can reduce these costs with just a few simple changes. Your child will be given a kit which includes FREE high quality energy and water saving products that utilize the latest efficiency technology. This kit is valued at over $50 and will provide you with the ability to make these changes.

To participate, please do the following:

- Have your child talk to you about the ways they would like to save energy and water and complete the Pledge Form located on the next page.
- Install all of the kit items. You and your child can do most of the activities in less than 15 minutes. If you need additional help installing the kit items, visit www.getwise.org to view installation videos or call 1-888-GET-WISE.
- Work with your child to answer all of the survey questions in the Take-Home Workbook.

The LivingWise Program will be an easy and fun experience for your entire family. Not only will it allow your child the chance to be a leader in your home and community, but also your family will immediately benefit from lower utility bills. Thank you for your participation.

LET'S GET STARTED!

QUESTIONS? • 1-888-GET-WISE • www.getwise.org

PADRES

OG/E®

We Energize Life

¡FELICITACIONES!

La clase de su hijo ha sido seleccionada para participar en el fascinante Programa LivingWise. El programa está diseñado para enseñarle a su hijo el valor del agua y de la energía y para ayudarle a usted a ahorrar dinero en sus facturas de servicios públicos. Este programa lo provee **Oklahoma Gas & Electric** SIN COSTO para usted, la escuela de su hijo ni el distrito escolar.

La vivienda promedio estadounidense paga por la mínima $2,200 por año en facturas de servicios públicos y puede reducir estos costos simplemente con algunos cambios sencillos. A su hijo se le dará un kit LivingWise que incluye productos GRATUITOS de alta calidad para el ahorro de agua y energía que utilizan la tecnología de ahorro más moderna. Este kit tiene un valor de más de $50 y le dará a usted la habilidad de implementar estos cambios.

Para participar, por favor haga lo siguiente:

- Haga que su hijo hable con usted sobre las formas en las que le gustaría ahorrar agua y energía y complete el Formulario de Compromiso ubicado en la próxima página.
- Instale todos los artículos del kit. Usted y su hijo pueden hacer la mayoría de las actividades en menos de 15 minutos. Si necesita ayuda adicional con la instalación de los artículos del kit, visite www.getwise.org para ver videos de instalación o llame al 1-888-GET-WISE.
- Trabaje con su hijo para responder todas las preguntas de la encuesta en el Libro de Trabajo para llevar a casa.

El Programa LivingWise será una experiencia sencilla y divertida para toda su familia. No sólo le permitirá a su hijo la posibilidad de ser un líder en su hogar y en su comunidad, sino que también su familia se beneficiará inmediatamente por las facturas más bajas de los servicios públicos. Gracias por su participación.

¡COMENCEMOS!

ESTUDIANTES

FORMULARIO DE COMPROMISO

Nombre:	Fecha:
Escuela:	Docente:

Comprometerse a ahorrar energía y agua es un paso importante para conservar nuestros recursos naturales y le ahorrará dinero a su familia en las facturas de servicios públicos. A medida que atraviesa por el Programa, aprenderá por qué es importante ahorrar energía y agua. El Programa le enseñará formas sencillas de ahorrar energía, agua y dinero. Asumir el Compromiso muestra que usted quiere ahorrar más energía y agua para reducir las facturas de los servicios públicos de su familia.

ASUMIR EL COMPROMISO

Le hemos ayudado a escribir su primer compromiso. Todo lo que tiene que hacer para completar el primer compromiso es instalar los artículos de su kit. Ahora, escriba dos compromisos más que describan cómo ahorrará energía y agua en el hogar. Recuerde, un compromiso es una promesa.

1. **Me comprometo** a hacer mi parte instalando todos los artículos de mi kit para ahorrar energía y agua así como para reducir las facturas de servicios públicos de mi familia.
2. _____
3. _____

FIRMAR EL COMPROMISO

He escrito y revisado mis anteriores compromisos y al firmar este formulario, prometo usar la energía y el agua de manera más eficiente en casa.

_____ _____

Firma del Estudiante *Firma del Padre*

Estos kits son posibles gracias a: OG&E We Energize Life

LIVINGWISE PROGRAM ©2023

STUDENTS

PLEDGE FORM

Name:	Date:
School:	Teacher:

Pledging to save energy and water is an important step in conserving our natural resources and will save your family money on utility bills. As you go through the Program, you will learn why it is important to conserve energy and water. The Program will teach you simple ways to save energy, water, and money. Taking the Pledge shows that you want to be more energy and water efficient to reduce your family's utility bills.

TAKE THE PLEDGE

We have helped you out by writing your first pledge. All you have to do to complete the first pledge is install the items from your kit. Now, write two more pledges describing how you will be more energy and water efficient at home. Remember, a pledge is a *promise*.

1. **I pledge** to do my part by installing all of the items in my kit to save energy and water as well as reduce my family's utility bills.
2. _____
3. _____

SIGN THE PLEDGE

I have written and reviewed my pledges above and by signing this form, I promise to use energy and water more efficiently at home.

_____ _____

Student Signature *Parent Signature*

These kits are made possible by: OG&E We Energize Life

LIVINGWISE PROGRAM ©2023

LivingWise® Program Contents

Each program includes the following materials:

Student Materials

- *Student Guide*
- *Take-Home Workbook*
- *LivingWise Kit (shown below)*
- *Parent Letter/Pledge Form*
- *Student Survey Form*
- *Certificate of Achievement*
- *Unlimited Website Access*
- *Toll-Free HELP Line*
- *"OG&E" Wristband*

Teacher Materials

- *Teacher Book*
- *Step-by-Step Program Checklist*
- *Program At A Glance*
- *State Academic Standards Sheets*
- *Electricity, Water, and Natural Gas Posters*
- *Teacher Survey Form*
- *Unlimited Website Access*
- *Toll-Free HELP line*
- *Self-Addressed Postage-Paid Envelope*

LivingWise Kit*

- *High-Efficiency Showerhead*
- *Two LED Light Bulbs*
- *Kitchen Faucet Aerator*
- *Bathroom Faucet Aerator*
- *Digital Thermometer*
- *LED Night Light*
- *Advanced Power Strip*
- *Flow Rate Test Bag*
- *Parent/Guardian Program Evaluation*
- *Quick Start Guide*
- *Installation Instruction Booklet*
- *Spanish-Translated Materials*

*Actual kit items may vary.

Hurry and enroll today - spots are filling up fast!

We know you are busy, so we've made enrolling a snap. Choose the ONE option that works best for you!

- **Fax this completed form to 1-800-544-8051**
- **Call toll free at 1-888-GET-WISE**
- **Email the information requested below to info@getwise.org**
- **Enroll online at www.getwise.org/enroll**

LIVINGWISE® PROGRAM

A SPECIAL $50.00 MINI GRANT FOR YOUR CLASSROOM

UP TO $100.00

Receive an additional $50 mini-grant when 80% of the completed Surveys are submitted by February 1, 2024

YES! Please enroll me in the FREE LivingWise® Program!
I have verified that the contact information below is correct.

Contact Name:_____

School Name:_____

City:_____ State:_____ ZIP Code:_____

School Phone:_____ Fax:_____

Email:_____

Phone (alternative):_____ Grade Level: 5th

Which month would you like to receive the materials? (circle one)

Aug. Sept. Oct. Nov. Dec. # of Students:_____

I would like to be contacted via: (circle all that apply)

School phone Alternate phone Fax Email

Please enroll the following additional teachers to participate in the FREE program. These teachers will also receive a $50.00 Mini Grant once they have submitted at least 80% of the completed student surveys by February 1, 2024.

Name:_____ # of Students:_____

Name:_____ # of Students:_____

Name:_____ # of Students:_____

Three reasons to enroll your classroom in LivingWise today!

1. Each student receives a FREE LivingWise Kit containing educational materials and energy-efficient products that can be installed in the student's home! For your convenience, we have enclosed a flyer describing the products.

2. Receive up to $100.00! Each enrolled teacher will receive a $50.00 Mini Grant. Additionally, each teacher will receive a $50.00 Mini Grant when returning 80% of completed Student Surveys by February 1, 2024.

3. Each teacher receives a FREE LivingWise® Kit to take home and use!

SUPPORTS STATE ACADEMIC STANDARDS

How do Teachers Benefit?

- NOTHING TO ADD - the program is meant as an enhancement to your current curriculum.
- The rigorous curriculum provided by this program adheres to the academic standards set for: ELA, Math, Next Generation Science, Technology, and College and Career Readiness.
- Program comes complete with a teacher manual and FREE LivingWise kits for each student.
- Implementation time is minimal and the time frame is flexible – you set the pace!
- PARENTS/GUARDIANS are encouraged to be directly involved in their child's education.
- Students learn how to help their FAMILIES save electricity, natural gas, and water.
- The FREE kits and exciting projects engage students to make learning fun!
- Partnerships in the community are fostered to create support for schools.

P: 1-888-438-9473
F: 1-800-544-8051
www.getwise.org/enroll

LIVINGWISE®
PROGRAM

OGE®
We Energize Life

3028

SEPTEMBER

- ☐ Consider using a dehumidifier instead of turning on the air conditioning. You will be comfortable at much higher temperatures if you reduce the humidity in your home.
- ☐ Place window units on the north or shady side of your residence to avoid overworking the unit in the hot daytime sun.
- ☐ Use an attic fan to get rid of the heat build-up in your attic. Heat from your attic eventually finds its way into your home.
- ☐ Keep both indoor and outdoor lighting fixtures and light bulbs clean. Dirty fixtures can absorb as much as 50% of the light's illumination.

OCTOBER

- ☐ Changes in weather can really affect your home. **OG&E's Weatherization Program** covers a wide range of home improvements worth thousands of dollars.
- ☐ Electric outlets can be insulated with a special insulation (available at a local building supply store) by removing the outlet covers and inserting the insulation. Additionally, insulation plugs can be installed on outlets that are not being used.
- ☐ Use a lighter wash cycle for lightly soiled dishes. Some dishwashers already have an 'Energy Saver' setting for a lighter wash.

NOVEMBER

- ☐ Shut off computers and other electronic appliances when not in use. Many computer monitors have a sleep mode setting which, when activated, greatly reduces energy consumption.
- ☐ Use a dimmer switch to control the amount of light you need in a room. Dimming your lights' illumination by one-half cuts energy consumption almost in half.
- ☐ Have your heating and cooling system tuned and inspected by a service professional. Losses from a poorly-maintained system accumulate over time, wasting energy and costing you more to operate.
- ☐ Set refrigerator temperatures between 37 and 40 degrees, and don't forget to clean the coils. Keep the refrigerator stocked; it takes more energy to cool an empty refrigerator.

DECEMBER

- ☐ When using your clothes dryer, dry loads consecutively to take advantage of the heat already built up.
- ☐ Try to minimize the number of times that outside doors are opened and closed. Each time you open the door, it allows cold air to enter your home and makes your heater work harder to keep up.
- ☐ Use energy-saving products such as small electric pans or toaster ovens to cook small meals instead of heating your large stove or oven.

Your guide to keeping your costs low, year-round

12-Month To Do List

Season after season, keep this list handy for ideas to help you become more energy conscious and better manage your home's usage. Visit **OGE.com** for more energy- and money-saving tips.

OG&E®

We Energize Life

JANUARY

- ☐ Lower the temperature of your water heater. You can save around 13% a year on water heating costs with a 10-degree temperature reduction.
- ☐ During the day, open curtains and blinds on your south facing windows to allow sunlight to naturally warm your home. Just be sure to close them at night to reduce the chill.
- ☐ Sealing air duct leaks in your attic can reduce heating costs by up to 20%.
- ☐ Don't let heat go up the chimney! Make sure your fire place damper is closed when you're not using it.

FEBRUARY

- ☐ Because heat rises, reversing the direction of your ceiling fan blades will pull warm air down from the ceiling and spread the heat more evenly throughout your home.
- ☐ Turn off the oven or stovetop a minute or two before cooking time has elapsed. It will still retain enough heat to finish the cooking.
- ☐ When you are away from home, turn your thermostat back 10 degrees. Do this consistently and you'll save around 10% a year on your heating bills.

MARCH

- ☐ Go online. Save your bank account information to your online account for convenient payment. You can also sign up for **myOGEalerts**™ and pay your bill by TEXT!
- ☐ As often as possible, wash your clothes in cold water. Experts agree that modern laundry detergents wash just as well in cold as in hot water, but without the cost to heat the water.
- ☐ Transition to LED light bulbs throughout your home. LED bulbs use up to 80% less energy over conventional light bulbs and last up to four years!

APRIL

- ☐ Spring is a great time to check your cooling system and proper sealing of all air ducts. This can be the best way to improve the energy efficiency and overall performance of your system. Clean or change air filters every two to three months. The free-flow of air is the key to cooling.
- ☐ In as little as one hour, exhaust fans in your kitchen or bathroom can deplete a house of its warm or cool air. Turn fans off as soon as they have finished their job.
- ☐ In honor of Earth Day, plant leafy trees on the south and west sides of your home to block heat from the sun in summer and let heat in during the winter. Be sure to plant the right tree in the right place to mitigate tree growth around power lines. Visit **OGE.com/VegetationManagement** to learn more.

MAY

- ☐ When using your dishwasher and washing machine, washing full loads saves time, detergent and energy. Your dishwasher uses the same amount of hot water for both small and full loads.
- ☐ When using your oven, keep the oven door closed. Every time you open the oven door, the temperature drops 25 degrees or more and your oven has to work harder and use more energy to sustain temperature settings.
- ☐ If your heating system has a pilot light, turn it off during the summer. A pilot light costs about $3 to $5 per month to keep lit.

JUNE

- ☐ Enroll in **SmartHours**™ and you could see savings all summer.
- ☐ Replacing older shower heads with low flow units could save a family of four as much as 15,000 gallons of water per year and can significantly reduce your water heating costs.
- ☐ If your oven has a self-cleaning cycle, start it while your oven is still warm from prior cooking.
- ☐ Clean the lint filter on your dryer after every load. Lint on the filter reduces air flow and makes your dryer use more energy.
- ☐ Caulk windows and doors to prevent drafts from coming into your home and keep conditioned air from escaping out.
- ☐ Keep cool and save. Valued at $250, our **Advanced A/C Tune-Up** can boost your A/C unit's energy efficiency by up to 30 percent at no out-of-pocket cost to you.

JULY

- ☐ Keep your thermostat at a constant, comfortable level (75-78 degrees) when you are home. Lowering the thermostat setting too far will not cool your home faster.
- ☐ A microwave oven cooks up to 75% faster and saves up to 70% of the energy used by a conventional oven.
- ☐ Keep shades, blinds and curtains closed. About 40% of unwanted heat comes through windows. Simply drawing blinds and curtains, which act as a layer of insulation, can reduce heat gain.

AUGUST

- ☐ Use fans to circulate air. This will more evenly distribute cool air and can reduce the "on" time of your air conditioner. A ceiling fan uses only about as much electricity as a light bulb.
- ☐ Don't place lamps or televisions near your air conditioning thermostat. The heat from these appliances will cause the air conditioner to run longer.
- ☐ Download the **OG&E mobile app!** You can report and monitor outages, pay and view your bill, track your energy usage and more. Available on iOS and Android.

Experience savings all year with the OG&E Weatherization Program

Get up to **$3,000** in energy efficiency upgrades – at no additional cost to you!

Services may include:

- Adding attic insulation
- Sealing around doors and windows
- Caulking, air sealing and weather-stripping
- Installing energy-saving LED light bulbs
- A/C Tune-up

Oklahoma residential customers must meet the following criteria to qualify:

- Annual household income of $60,000 or less
- Own or rent* single-family home, duplex or mobile home

**Landlord approval required*

Increase your savings. Learn more:
OGE.com/weatherization

See other side for info about SmartHours — the perfect complement to our Weatherization Program.

Some restrictions and state-mandated guidelines may apply.

SmartHours™ – Because it's a SMART Time to Save

It's never too early to start preparing to save on energy this summer. Whether you're a long-time SmartHours customer or looking to join the program, we have SMART tips to help you save:

- Discover which SmartHours rate would be the right fit for your lifestyle. Customers can see savings on both Variable-Peak Pricing and Time-of-Use.
- Energy-efficient homes see greater savings each summer. Sign up for our Weatherization Program, which includes up to $3,000 in expert energy-saving recommendations and upgrades to prepare your home for the hot summer months — at no additional cost to you!

Not on SmartHours? Learn more and sign up today!

Get ready for SmartHours season. Learn more:
OGE.com/SmartHours

See other side for info about our Weatherization Program - you could qualify for thousands of dollars in upgrades.

OG&E®

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Lower your costs, increase your comfort

OG&E®

We Energize Life

OKLAHOMA

Increase the comfort of your home and make your energy bill more manageable at no additional cost.

Our trained crews have worked to improve the homes of more than 50,000 customers over the years and they're not stopping now! Valued at approximately $3,000, the **OG&E Weatherization Program** covers a wide range of improvements that may include but are not limited to:

- Adding attic insulation
- Sealing around doors and windows
- Caulking, air sealing and weather-stripping
- Installing energy-saving LED light bulbs
- A/C Tune-up

The **OG&E Weatherization Program** is available to residential customers who meet the following criteria:

- Household income of $60,000 or less a year
- Own or rent* a single-family home, duplex or mobile home

Spots are limited so if you or someone you know could benefit from home weatherization improvements at no additional cost, don't wait!

Check Your Eligibility

Visit **OGE.com/weatherization** to see if you're eligible and to enroll in OG&E's Weatherization Program. You can also contact OG&E Customer Service at 800-272-9741 from 8 a.m. to 5 p.m., Monday through Friday.

**Some restrictions and state-mandated guidelines may apply.*

OG&E® WEATHERIZATION PROGRAM

Reduzca sus costos, aumente su comodidad.

OG&E

Energía para dar Vida

OKLAHOMA

Aumente la comodidad de su hogar y tenga un mayor manejo de su factura de energía sin costo adicional.

Nuestro personal capacitado ha trabajado para mejorar los hogares de más de 50,000 clientes a través de los años, ¡y no piensan detenerse ahora! Con un valor aproximado de $3,000, el **Programa de Climatización de OG&E** cubre una amplia variedad de mejoras, las cuales pueden incluir, pero no limitarse a:

- Añadir aislamiento al ático
- Sellado de ventanas para eliminar fugas y corrientes de aire
- Colocación de burletes (cintas protectoras) alrededor de las puertas
- Instalación de focos LED ahorradores de energía
- Puesta a punto del aire acondicionado

El **Programa de Climatización de OG&E** está disponible para los clientes residenciales que cumplen con los siguientes requisitos:

- Ingreso familiar de $60,000 o menos al año
- Es dueño de casa o alquila una casa móvil, unifamiliar o dúplex

La disponibilidad es limitada, por lo que si usted o alguien que conoce puede beneficiarse de mejoras de climatización del hogar sin costo adicional, ¡no espere más!

Verifique su elegibilidad

Visite **OGE.com/weatherization** para ver si usted es elegible y para inscribirse en el Programa de Climatización de OG&E. También puede contactar el Centro de Atención al Cliente de OG&E llamando al 800-272-9741 de 8 a.m. a 5 p.m., de Lunes a Viernes.

OG&E PROGRAMA DE CLIMATIZACIÓN

**Pueden aplicarse algunas restricciones y pautas exigidas por el estado.*

SU CASA ES LA BASE DE SU FAMILIA

ESTAMOS AQUÍ PARA CLIMATIZARLA

Ahorre hasta un 30% en aire y calefacción, con hasta $3,000 dólares* en servicios de impermeabilización sin costo adicional para usted:

- ENMASILLADO
- BURLETES
- AISLAMIENTO DEL ÁTICO
- ILUMINACIÓN LED
- AJUSTE DE AIRE ACONDICIONADO

Y MÁS

Obtenga todo o exactamente lo que necesite para **reducir sus costos energéticos y aumentar su comodidad.**

*Para hogares con un ingreso familiar menor a $60,000 dólares al año, ya sea que rente o sea dueño de una casa unifamiliar.

Conozca más formas de ahorrar con el programa de climatización de OG&E. **OGE.com/weatherization**

O escanee aquí

OGE®

Energía para dar Vida

TEACHER SURVEY

Your feedback is greatly appreciated.

Program brought to you by:

OG&E®

We Energize Life

Date: _____

School: _____

Teacher Name: _____

Email: _____

Number of Student Survey Forms Returned: _____

Teacher Signature: _____

Please assess the LivingWise® Program Program by filling out this Teacher Survey form. Upon completion, return this Teacher Survey form, your Student Survey forms, student thank-you notes, and a letter from you to **Oklahoma Gas & Electric** in the postage-paid return envelope provided.

PLEASE FILL IN THE CIRCLE THAT BEST DESCRIBES YOUR OPINION:

1. The materials were clearly written and well organized.

❍ Strongly Agree ❍ Agree ❍ Disagree ❍ Strongly Disagree

2. The products in the kit were easy for students to use.

❍ Strongly Agree ❍ Agree ❍ Disagree ❍ Strongly Disagree

3. Students indicated that their parents supported the program.

❍ Yes ❍ No

4. Would you conduct this program again?

❍ Yes ❍ No

5. Would you recommend this program to other colleagues?

❍ Yes ❍ No

6. Would you be willing to participate on a local Teacher Focus Group?

❍ Yes ❍ No

7. If my school is eligible for participation next year, I would like to enroll.

❍ Yes ❍ No

8. What did students like best about the program? Explain.

9. What did you like best about the program? Explain.

10. What would you change about the program? Explain.

GET UP TO $100.00 MINI GRANT!

Return the following by February 1, 2024:

- Enroll in the program
- 80% of Student Survey forms
- This Survey form
- Student thank-you notes
- A letter from you

OG&E®

We Energize Life

WELCOME

Thank you for choosing to participate! The LivingWise Program will help your students and their families learn the importance of natural resources and immediately lower their utility bills. **Oklahoma Gas & Electric** has fully paid for and provided this program for your class.

Program materials are continually updated using feedback from teachers just like you. This year, the following enhancements have been made:

- **TEACHER MATERIALS.** The *Teacher Book* includes a Program At A Glance, chapters, lessons, hands-on classroom activities, and teaching ideas.
- **STUDENT MATERIALS.** The *Student Guide* includes easy-to-use chapters and lessons, visual aids, charts and graphs, vocabulary exercises, engagement exercises, and "think and apply" discussion topics.
- **PARENT MATERIALS.** The introduction letters to parents and the kit contain information specifically designed to engage parents. Materials reinforce the concepts taught and will effectively help parents become an active participant in their child's education.
- **SUPPORT OF MORE STATE STANDARDS.** The materials meet or exceed state academic standards in science, math, and language arts.

To ensure program success and your eligibility for a Mini Grant, please do the following:

- **HAVE YOUR STUDENTS INSTALL ALL OF THE PRODUCTS IN THE KIT.** Installation of all of the products is essential for learning how to conserve at home. The more products that are installed, the higher probability that the program will be available in future years.
- **IMPLEMENT THE PROGRAM.** Most teachers find that they can implement the program in two weeks or less. Find a time to fully implement the program so that students and their families have the best opportunity to save natural resources and money on the utility bill.
- **RETURN PROGRAM RESULTS.** Make sure that each student completes a Student Survey form and thank-you note. Return the Student Survey forms, thank-you notes, the Teacher Survey form (located on the reverse side of this letter) and a letter from you in the postage-paid envelope provided.

Questions? Call 1-888-GET-WISE or visit www.getwise.org.

Lower costs, increased comfort

Take advantage of weather-proofing services that'll save you money and give your family the increased comfort they deserve.

Up to $3,000* in:

- CAULKING
- WEATHER STRIPPING
- ATTIC INSULATION
- LED LIGHTING
- HVAC TUNE-UP

AND MORE

** for households making less than $60,000 a year whether you rent or own a single-family home*

See if you are eligible for savings at **OGE.com/weatherization**

Or scan here

OGE®

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You may qualify for up to **$3,000** in home weather-proofing services

See if you are eligible for savings at
OGE.com/weatherization

Or scan here

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OKLAHOMA

OG&E COMMERCIAL EV CHARGER REBATE PROGRAM

SUPPORT ELECTRIC VEHICLES **AND YOUR BUSINESS**

OG&E's EV Charger Rebate Program offers commercial customers incentives for purchasing qualified electric vehicle charging stations on their premises.

All businesses, nonprofit groups and schools qualify for these incentives. Our incentives offset your purchase, making it easier to become a leader in developing sustainable EV infrastructure for our community.

**Customers are eligible for rebates for up to 10 qualifying chargers per program year.*

How your business can benefit:

- Promotes your organization as eco-friendly and forward-thinking
- Helps you achieve your sustainability goals
- Assists with employee recruitment and retention
- Builds goodwill by providing a community amenity
- Increases your property value

Save
$250
per Level 2 EV charging port.*

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CONTACT US FOR
MORE INFORMATION:

844-882-5746
OGE.com/EV
ceepleads@clearesult.com

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OG&E EV CHARGER REBATE PROGRAM

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All businesses, nonprofit groups and schools qualify for these incentives. Our incentives offset your purchase, making it easier to become a leader in developing sustainable EV infrastructure for our community.

Incentives*

Charger Type	Standard	Qualifying Product
Level 2	$250 per port	ENERGY STAR® certified

**Customers are eligible for rebates for up to 10 qualifying chargers per program year.*

How your business can benefit:

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- Helps you achieve your sustainability goals
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Save
$250
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ceepleads@clearesult.com

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MIDSTREAM INSTANT INCENTIVE
PARTICIPATING DISTRIBUTOR LOCATIONS

ADA
- Broken Arrow Electric
- Locke Supply

ARDMORE
- Ardmore Electric
- CED
- Hunzicker Bros
- Locke Supply

BETHANY
- Locke Supply

BROKEN ARROW
- Lighting Inc.
- Rexel USA

CUSHING
- Broken Arrow Electric

DURANT
- Broken Arrow Electric
- Locke Supply

EDMOND
- Batteries Plus Bulbs
- City Electric Supply
- Elliott Electric
- Locke Supply

ENID
- CED
- Elliott Electric
- Irby Electrical
- Locke Supply

LAWTON
- Hunzicker Bros

MCALESTER
- Broken Arrow Electric

MIDWEST CITY
- Batteries Plus Bulbs
- City Electric Supply
- Locke Supply

MOORE
- City Electric Supply
- Elliott Electric
- Locke Supply

MUSKOGEE
- Broken Arrow Electric
- Irby Electrical
- Locke Supply

MUSTANG
- Locke Supply

NORMAN
- Batteries Plus Bulbs
- City Electric Supply
- Locke Supply

OKLAHOMA CITY
- Batteries Plus Bulbs
- Bright Lights
- Broken Arrow Electric
- CED
- City Electric Supply
- Elliott Electric
- EMSCO
- Hunzicker Bros
- Irby Electrical
- Locke Supply
- Luminous of Oklahoma
- Rexel USA
- Star Lighting
- Voss Lighting

POTEAU
- Rexel USA
- Wholesale Electric Supply

SHAWNEE
- Hunzicker Bros
- Locke Supply

STILLWATER
- Hunzicker Bros
- Locke Supply

TULSA
- Irby Electrical

WOODWARD
- Hunzicker Bros
- Locke Supply

YUKON
- Locke Supply

Funds are available on a first-come, first-served basis and limited to $2,500/month/customer/location.

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OKLAHOMA

INSTANT REBATES FOR SMALL BUSINESS
LONG-TERM SAVINGS

LEDs	
LED Pin-Base CFL Direct Replacement Lamp	$5

LED LINEAR FIXTURES	
2x2 LED Linear Fixture	$20
2x2 LED Linear Fixture w/ Integrated Sensor	$25
2x4 LED Linear Fixture	$30
2x4 LED Linear Fixture w/ Integrated Sensor	$35

LED WALL PACK/FLOOD/POLE MOUNT	
LED Wall Pack/Flood 7 W–29 W	$20
LED Wall Pack/Flood 30 W–80 W	$50
LED Wall Pack/Flood +80 W	$80

LINEAR	
LED 8' Tube	$12
LED T8 Replacement	$3
LED T5 Replacement *(LED replacement lamps for 46" T5 HO fluorescent lamps)*	$5

LED LOWBAY/HIGHBAY	
LED Lowbay/Highbay 30 W–60 W	$65
LED Lowbay/Highbay 61 W–100 W	$75
LED Lowbay/Highbay +100 W	$100

OTHER REBATES	
Wall Sensor	$20
Ceiling Sensor	$30

DISTRIBUTOR
LOGO AREA

Sample Company Name
XXX.XXX.XXXX
samplecompanyname.com

Ask our sales staff for more details.

Contact us for more information:

email: **ogemidstreamok@clearesult.com**
website: **OGE.com/CEEP**
phone: **405-437-4304**

**Funds are limited and available on a first-come, first-served basis. Products must be purchased from approved OG&E distributor.*
***Specific lamps, fixtures, or sensors must be validated by the PPC. (All products aside from sensors must be currently listed with DLC, or be ENERGY STAR® approved.)*

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BRIGHTEN UP
YOUR BOTTOM LINE.

Find instant discounts on LEDs, courtesy of OG&E.
Ask store staff for details.

Scan the code for more information,
or contact us at: **405-437-4304**
ogemidstreamok@clearesult.com

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OKLAHOMA

HELP YOURSELF TO **FOODSERVICE REBATES.**

Does your commercial kitchen have a big appetite for energy? You're in luck: We now offer incentives to help you replace your old inefficient appliances with ENERGY STAR® certified electric equipment.

Benefits of upgrading:

- The typical restaurant uses **5–7 times more energy** per square foot than other commercial buildings.
- ENERGY STAR certified combination ovens are up to **30 percent more energy efficient** than standard models and feature better gaskets for faster and more uniform cooking.
- ENERGY STAR certified griddles are up to **11 percent more energy efficient** than standard models, thanks to improved thermostatic controls and higher production capacity.
- ENERGY STAR certified steam cookers use up to **70 percent less energy** and up to 90 percent less water than standard models.

Source: energystar.gov

Available incentives:

Equipment

Combination Ovens	**Rebate**
5-10 Pan Combination Ovens	$1,000
14-19 Pan Combination Ovens	$1,200
20+ Pan Combination Ovens	$1,400
Steam Cookers	**Rebate**
3 Pan Steam Cooker	$500
4 Pan Steam Cooker	$750
5 Pan Steam Cooker	$1,000
6 Pan Steam Cooker	$1,200
Fryers	**Rebate**
Standard Vat Fryer	$150
Large Vat Fryer	$100

Refrigerators/Freezers	**Rebate**
Solid Door Refrigerator (> 50 cu. ft.)	$1,500
Solid Door Refrigerator (15 cu. ft. < capacity < 50 cu. ft.)	$1,000
Solid Door Freezer (> 50 cu. ft.)	$1,500
Solid Door Freezer (15 cu. ft. < capacity < 50 cu. ft.)	$1,000
Convection Ovens	**Rebate**
Convection Oven, half size	$75
Convection Oven, full size	$400
Dishwashers	**Rebate**
Stationary Single Tank Door, High Temperature Dishwasher	$500
Stationary Single Tank Door, Low Temperature Dishwasher	$600
Single Tank Conveyor, High Temperature Dishwasher	$500
Single Tank Conveyor, Low Temperature Dishwasher	$600
Griddles	$100/sq. ft.

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INCENTIVE APPLICATION

CUSTOMER INFORMATION

Company:	Mailing Address:	
City:	State:	ZIP:
Contact Person:		
Phone:	Email:	
Installation Address:		
City:	State:	ZIP:

Primary Contact: ☐ Customer ☐ Dealer

FOODSERVICE DEALER INFORMATION

Company:	Mailing Address:	
City:	State:	ZIP:
Contact Person:		
Phone:	Fax:	Email:
OG&E customer account # where equipment is being installed:		

Primary Contact: ☐ Customer ☐ Dealer

NEW EQUIPMENT INFORMATION

Install Date	Equip. Type	Qty.	Size	Manufacturer	Model #	Serial #

CUSTOMER INFORMATION

Participant Signature:	Foodservice Dealer/Installer Signature:

Please submit your completed application, equipment receipt(s) and installation invoice(s) within 30 days to:

Mail: OG&E Rebates
P.O. Box 2900
Oklahoma City, OK 73101

Email: keely.mallory@clearesult.com
Phone: 405-437-4304

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OG&E ADVANCED A/C TUNE-UP PROGRAM

Saving Energy Has Never Been Cooler

Want to know something cool? A state-of-the-art OG&E Advanced A/C Tune-up can improve the energy efficiency of your A/C unit by up to 30 percent, resulting in longer-lasting, better-working equipment with improved comfort and humidity control. We'll even cover the cost, based on the tonnage of the unit (additional charges may apply).

During your tune-up, a participating contractor will:

- Measure indoor airflow and recommend adjustments if needed
- Clean outdoor condenser coils
- Inspect indoor coil and blower and clean as needed
- Test your A/C to measure its cooling output

Save up to
$400
on an OG&E Advanced A/C Tune-up.

Scan to Enroll

Contact us:

844-882-5746
ogehvac@clearesult.com
Learn more at **OGE.com/Business**

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OG&E SCHOOLS & GOVERNMENT EFFICIENCY PROGRAM

FACT SHEET

Design
OG&E provides incentive funding for energy-efficient upgrades and retrofits to all educational and publicly funded facilities within our service territory. Based on the energy-efficient measures you choose, we'll help you secure the largest incentives available. Free educational activities are also available, which are designed to help administrative personnel at facilities to identify and quantify energy efficiency opportunities.

Goals
The program aims to help cover a portion of the total cost of each project. Over the long term, we're here to help participants save money on utility bills, improve comfort and protect the environment through education, increased efficiency and responsible energy consumption.

Implementation
Program representatives will help facilities with participation in all our available services, and help determine what energy efficiency measures will work best for them.

Eligibility
All educational and publicly funded facilities are eligible to participate if they're located within the OG&E service territory.

Timeframe
Participation is based on a first-come, first-served basis throughout the program year, or while funds last.

More ways
to save

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CONTACT US FOR
MORE INFORMATION:

844-882-5747
sage@oge.com

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OG&E SCHOOLS & GOVERNMENT EFFICIENCY PROGRAM

MEASURES SHEET

OG&E's Schools and Government Efficiency Program provides a variety of energy efficiency measures for educational and publicly funded facilities. We'll provide an energy assessment at **no out-of-pocket cost** to you to help you identify and install the measures that could bring you the biggest savings.

Lighting retrofits
Modern, efficient fixtures use less energy while providing high-quality light that is designed to improve the learning environment.

Exit light replacements
Replace aging and inefficient incandescent exit lights with energy-saving LED units.

Gym and multipurpose room lighting replacements
Older gym and multipurpose room lighting can be inefficient as well as unappealing. This retrofit will solve both issues.

Sports lighting
Retrofitting existing sports lighting with efficient LEDs can greatly reduce energy and maintenance costs.

HVAC replacement
Older HVAC systems can be a major cause of wasted energy. Upgrading is one of the easiest ways to save.

More ways to save

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OG&E ENERGY EFFICIENCY

CONTACT US FOR MORE INFORMATION:

844-882-5747

sage@clearesult.com

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OG&E SCHOOLS AND GOVERNMENT EFFICIENCY PROGRAM

FORT GIBSON SCHOOLS SWITCH ON THE SAVINGS

With help from OG&E's Schools and Government Efficiency Program, a district-wide lighting upgrade is saving Fort Gibson Public Schools thousands each year.

Getting Schooled in Efficiency

The Fort Gibson Public School District reached out to OG&E with concerns about its outdated lighting system and rising energy costs. Through the School and Government Efficiency Program, OG&E provides publicly funded facilities like Fort Gibson schools with guidance and incentives for energy efficiency projects.

OG&E's participating contractors performed a full lighting retrofit of the school district's kindergarten, middle school, high school, administrative offices and gymnasiums. That meant replacing each of the district's 1,621 T8 and T12 bulbs with longer-lasting, energy-saving LED bulbs. To offset the costs of the upgrades, OG&E provided the district with more than $50,000 worth of incentives.

Thanks to these incentives and energy cost savings of more than $27,000, the district is expected to recoup its investment within five years.

Lighting the Way to Savings

The success of the lighting retrofit inspired the district to also participate in OG&E's benchmarking services. By comparing Fort Gibson schools' energy performance metrics to similar buildings, OG&E's energy experts will be able to calculate the most cost-effective, energy-saving opportunities for the school district.

SAVINGS AT A GLANCE

364,029 kWh
SAVED

$27,666
ESTIMATED ANNUAL SAVINGS

$54,604
INCENTIVES PROVIDED BY OG&E

4.8 years
ESTIMATED PAYBACK PERIOD

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OKLAHOMA

OG&E'S ADVANCED A/C TUNE-UP PROGRAM

SAVING ENERGY
HAS NEVER BEEN COOLER

Want to know something cool? A state-of-the-art OG&E Advanced A/C Tune-up can improve the energy efficiency of your A/C unit by **up to 30 percent**, resulting in longer-lasting, better-working equipment with improved comfort and humidity control. We'll even cover the cost, based on the tonnage of the unit (additional charges may apply).

During your tune-up, a participating contractor will:

- Measure indoor airflow and recommend adjustments if needed
- Clean outdoor condenser coils
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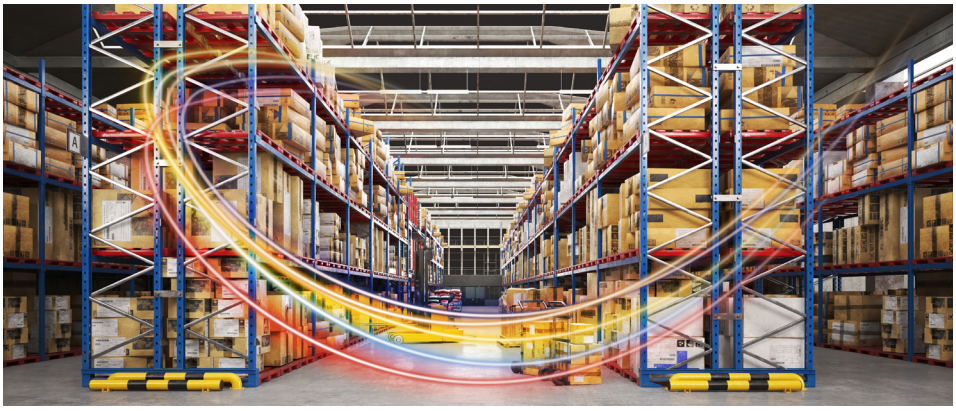
OG&E COMMERCIAL ENERGY EFFICIENCY PROGRAM

MEASURES SHEET



OG&E's Commercial Energy Efficiency Program offers financial incentives when energy efficiency measures are implemented at large commercial facilities like yours. We'll provide a free and easy energy assessment to help you identify and financially qualify for potential energy savings projects that could even include little or no-cost solutions.

To make reducing your energy costs even easier, we also offer significant incentives for each energy-efficient upgrade installed. Incentives are available for the following measures, including but not limited to:

- HVAC – DX Retrofit
- HVAC – DX New Construction
- Chiller Retrofit
- Chiller New Construction
- PC Power Management
- LED Lighting Retrofit
- Lighting New Construction
- Linear Fluorescent Retrofit with Delamp
- Vending Misers
- Door Heater Controls
- ECM Evaporator Fan
- Electronic Defrost Controls
- Solid Door Reach-Ins
- Strip Curtains
- Night Covers
- Cooler Door Gaskets
- Lighting Controls
- Lodging Occupancy Controls
- Compressed Air
- Combined Custom Measures
- Retrocommissioning
- Variable Frequency Drives

More ways to save

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OG&E'S CONTINUOUS ENERGY IMPROVEMENT PROGRAM

DAILY **ENERGY-SAVING ACTIONS**

Our schools are participating in an innovative program aimed at reducing our energy costs by incorporating energy-saving best practices into our daily routines. Your actions will add up to significant savings!

Building

- ☐ Make sure all windows and doors to the outside are closed and locked.
- ☐ Close all blinds and window coverings in all areas.
- ☐ Close all interior doors separating spaces (gyms, auditoriums and entryways).
- ☐ Report any facility damage or repairs to the facilities team.

Water

- ☐ Check all drinking fountains, faucets, showers and toilets for leaks; report any leaks to the facilities team.

Miscellaneous

- ☐ If performing major floor projects such as shampooing or waxing, do so with energy efficiency in mind, keep exterior doors shut and only light areas that are being cleaned. Coordinate these activities with the facility maintenance departments.

Lighting & Devices

- ☐ Only turn on lights where work is taking place.
- ☐ Turn off lighting in all unoccupied areas.
- ☐ Check computer labs and make sure all computers and monitors are switched off.
- ☐ Turn off all display case lighting and hallway lighting.
- ☐ Turn off all cleaning room or janitorial closet lights when not in use.
- ☐ When the building is not occupied, make sure all interior lights are turned off except exit and emergency lighting.

Security

- ☐ Lock all secure areas.

Miscellaneous Items

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7.3 AM Conservation™ LivingWise™ Report

OG&E Oklahoma LivingWise®

PROGRAM SUMMARY REPORT

2023 Calendar Year

SUBMITTED BY:

AM CONSERVATION™

OG&E Oklahoma LivingWise®

PROGRAM SUMMARY REPORT

2023 Calendar Year

MADE POSSIBLE BY:

OG&E®

We Energize Life

SUBMITTED BY:

AM CONSERVATION™

May 2024

Executive Summary

"I enjoyed learning right along with my students about conserving energy. I also liked the activities to get them more involved."

Brandi Humphries, Teacher
Pioneer - Pleasant Vale Elementary School

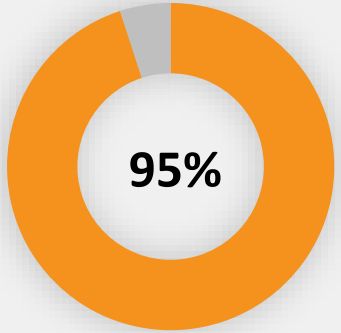
Executive Summary

AM Conservation is pleased to present this Program Summary Report to OG&E, which summarizes the 2023 Calendar Year OG&E LivingWise® Program. The program was implemented in the OG&E service area in the state of Oklahoma by 8,811 students, and their families.

The following pages provide an overview of the program and materials, outline of program implementation, introduction to the program team, description of program enhancements, impact of the program, and summary of results from the home activities. In addition to this information, evaluations, letters, and comments are provided for a glimpse into actual participant feedback. Lastly, projected savings from the individual measures found within the LivingWise Kit are also included.

Participant Satisfaction

A successful program excites and engages participants. Students, parents, and teachers are asked to evaluate the program and provide personal comments. A sample of the feedback is given in the margin.

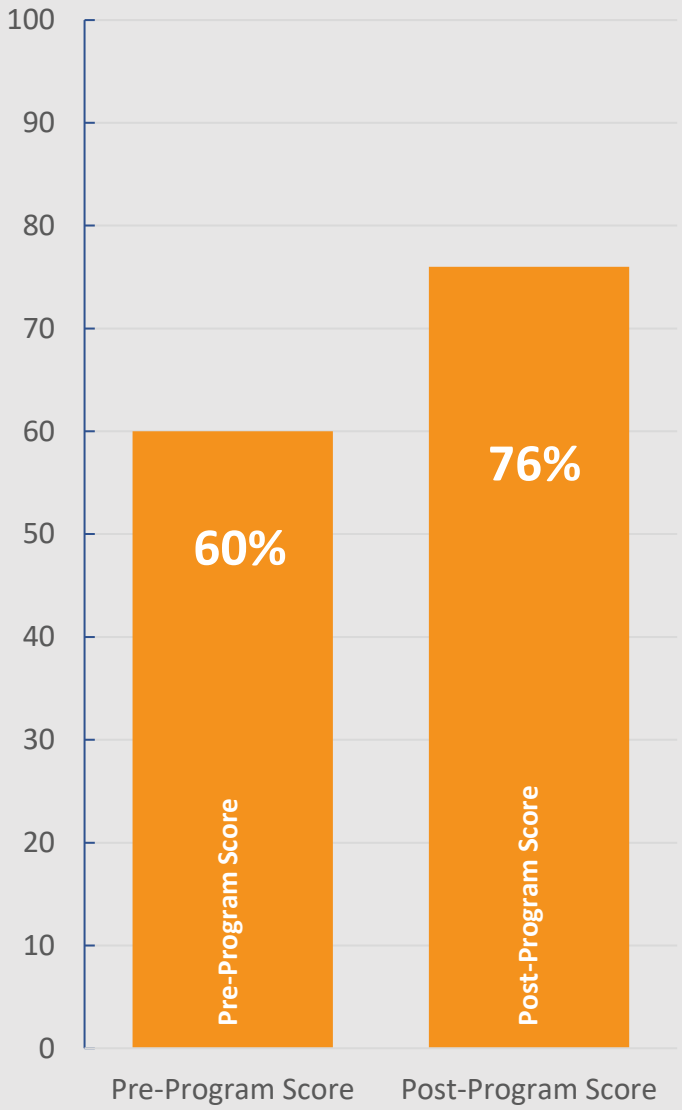


Teachers who indicated parents supported the program.

Teachers who indicated they would recommend this program to other colleagues.

Teachers who indicated they would conduct this program again.

Executive Summary

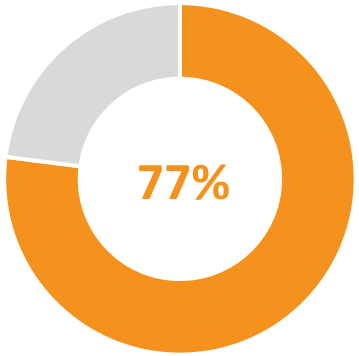


Knowledge Gained

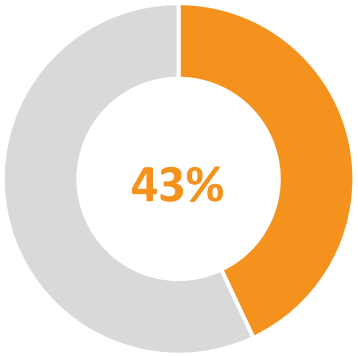
Identical tests were administered to the students prior to the program and again upon program completion to measure knowledge gained. Scores and subject knowledge improved from 60% to 76%.

Data Obtained

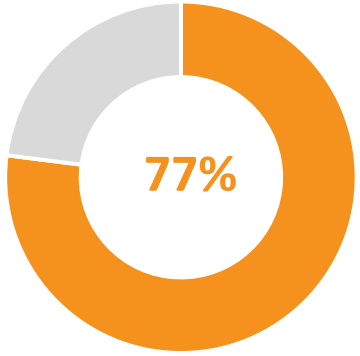
Home surveys were taken by students and their families, which collected household demographic and consumption data along with program participation information.



Student who reported that their family homes were owned.



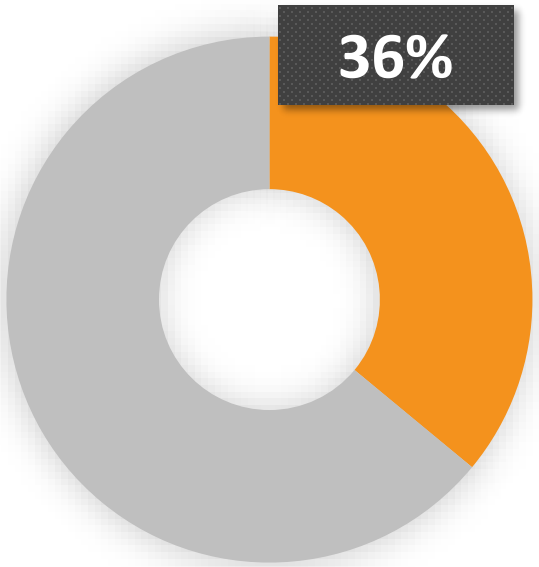
Student who reported that their water was heated by electricity.



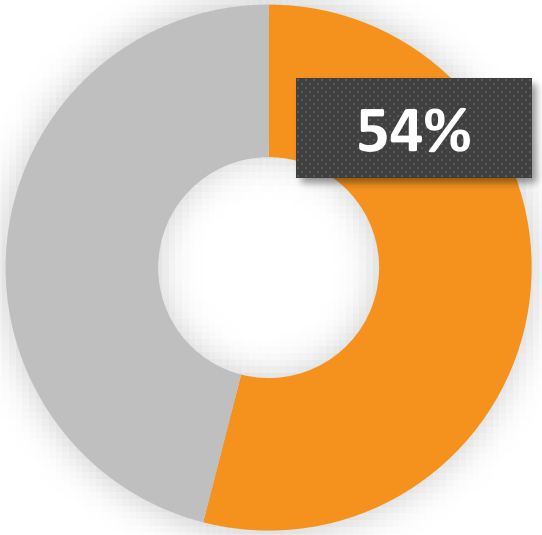
Student who reported that their home has a dishwasher.

Measures Installed

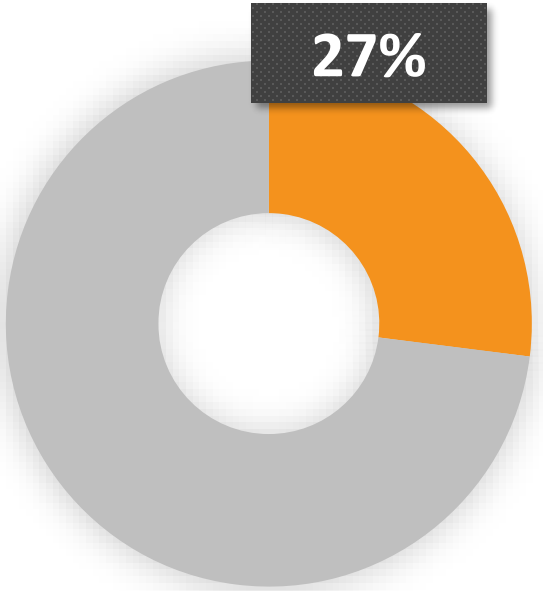
Students completed take-home activities as part of the program and reported on the kit measures they installed in their homes.



Students who reported installing the Showerhead.



Students who reported installing the First LED Light Bulb



Students who reported installing the Kitchen Faucet Aerator.

Energy and Water Savings Results

In addition to educating students and their parents, a primary program goal is to generate cost-effective energy and water savings. Student home surveys not only provided the data used in the savings projections, but also reinforced the learning benefits.

Projected Resource Savings

PROJECTED ANNUAL SAVINGS	
17,632,471	gallons of water saved
1,788,489	kWh of electricity saved
199	kW peak demand reduction

PROJECTED ANNUAL SAVINGS PER HOME	
2,001	gallons of water saved
202.98	kWh of electricity saved
0.02262	kW peak demand reduction

PROJECTED LIFETIME SAVINGS	
176,324,713	gallons of water saved
18,073,453	Net kWh of electricity saved

PROJECTED LIFETIME SAVINGS PER HOME	
20,012	gallons of water saved
2,051	Net kWh of electricity saved

Program Overview

The OG&E Oklahoma LivingWise® Program, a school-based energy efficiency education program, is designed to generate immediate and long-term resource savings by bringing interactive, real-world education home to students and their families. The 2023 Calendar Year program was taught in 5th grade throughout the OG&E Oklahoma service area.

The OG&E Oklahoma LivingWise® Program team identifies and enrolls students and teachers within the designated service area. The program physically begins with classroom discussions using a Student Guide that provides the foundations of using energy and water efficiently. It is followed by hands-on, creative, problem-solving activities led by the classroom teacher.

All program materials support state and national academic standards to allow the program to fit easily into a teacher's existing curriculum and requirements. The participating classroom teachers follow the Teacher Book and lesson plan. Information is given to guide lessons throughout the program in order to satisfy each student's individual needs, whether they are visual, auditory, or kinesthetic learners.

The LivingWise Kit and Student Take-Home Workbook comprise the take-home portion of the program. Students receive a kit containing high-efficiency measures they use to install within their homes. With the help of their parents/guardians, students install the kit measures and complete a home survey. The act of installing and monitoring new energy efficiency devices in their homes allows students to put their learning into practice. Here, participants and their parents/guardians realize actual water and energy savings within their home, benefitting two generations.

A critical element of AM Conservation program design is the use of new knowledge through reporting. At the end of the program, the OG&E program team tabulates all participant responses—including home survey information, teacher responses, student letters, and parent feedback—and generates this Program Summary Report.

"For more than 29 years, AM Conservation has designed and implemented Measure-Based Education® programs. The programs inspire change in household energy and water use habits while delivering significant and measurable resource savings."

Program Overview

Each participant in the OG&E Oklahoma LivingWise® Program receives classroom materials and energy efficiency kits containing high-efficiency measures to perform the program's take-home activities. Program materials for students, parents/guardians, and teachers are outlined below.

Each Student & Teacher Receives

Student Guide
Student Take-Home Workbook
Parent Letter/Pledge Form*
Student Survey Form
Certificate of Achievement

LivingWise Kit Containing:

- (1) High-Efficiency Showerhead
- (2) LED Light Bulbs
- (1) Bathroom Faucet Aerator
- (1) Kitchen Faucet Aerator
- (1) LED Night Light
- (1) Advanced Power Strip
- Digital Thermometer
- Flow Rate Test Bag
- Parent/Guardian Program Evaluation
- Quick Start Guide
- Installation Booklet

OG&E Wristband
Program Website Access at Getwise.org
Toll-Free HELP Line

Each Teacher/Classroom Receives

Teacher Book
Step-by-Step Program Checklist
Lesson Plans
State Academic Standards Chart
Teacher Survey Form
Pre/Post Student Survey Answer Keys
Water, Electricity and Natural Gas Posters
Self-Addressed Postage-Paid Envelope

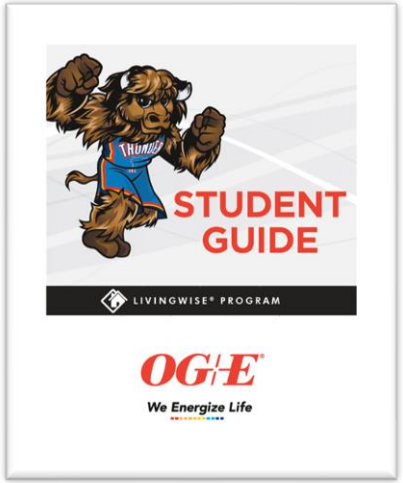
** Materials / Installation Instructions provided in English and Spanish*

Program Overview

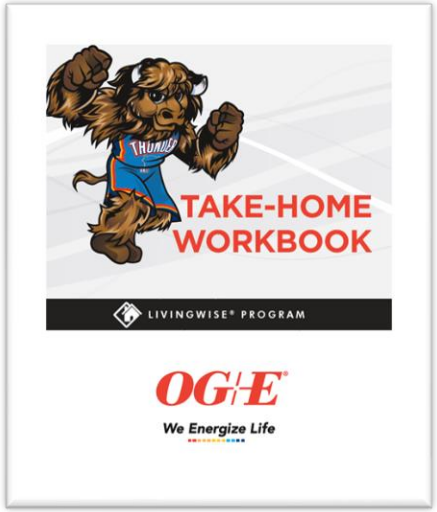
Custom Branding

In addition to increasing resource awareness and efficiency, the program has been designed to strengthen bonds between OG&E and the community. One of the steps taken to ensure the greatest possible exposure is to feature the OG&E logo throughout each LivingWise Kit. In addition to the kit, the Teacher Survey Form and Parent Letter/Pledge Form also feature OG&E branding.

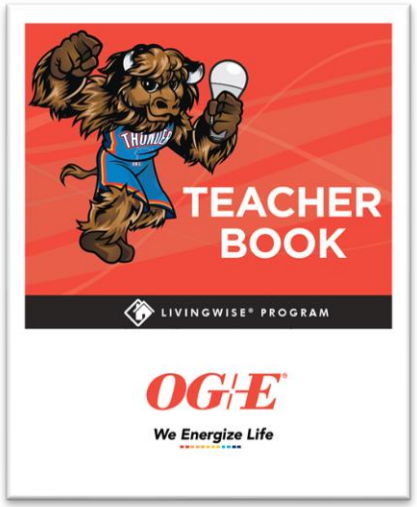
Program Materials



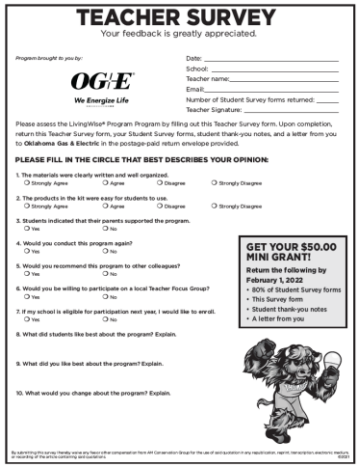
Student Guide



Student Take-Home Workbook



Teacher Book



Teacher Survey Form

Parent Letter/Pledge Form

Certificate of Achievement

Program Implementation

The 2023 Calendar Year OG&E Oklahoma LivingWise® Program followed this comprehensive implementation schedule:

1. Identification of Oklahoma state academic standards & benchmarks
2. Curriculum development and refinement (completed annually)
3. Curriculum correlation to state academic standards & benchmarks
4. Materials modification to incorporate OG&E branding
5. Incentive program development
6. Teacher/school identification—with OG&E approval
7. Teacher outreach and program introduction
8. Teachers enrolled in the program individually
9. Implementation dates scheduled with teachers
10. Program material delivered to coincide with desired implementation date
11. Delivery confirmation
12. Periodic contact to ensure implementation and teacher satisfaction
13. Program completion incentive offered
14. Results collection
15. Program completion incentive delivered to qualifying teachers
16. Data analysis
17. Program Summary Report generated and distributed

Participating teachers are free to implement the program to coincide with their lesson plans and class schedules. The participant list within this document provides a comprehensive list of classrooms in the fifth grade that participated during the 2023 Calendar Year school year.

Parent Feedback

“I love that they are given an energy saving kit to take home to talk about and install with their family.”

Cora Winterscheid, Parent
Strother Elementary School

Program Team

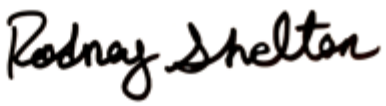
AM Conservation has been in the business of designing and implementing energy and water efficiency programs for nearly three decades. Throughout this time, we've built an expert team of industry professionals that deliver a seamless program to achieve your goals.

We designed the OG&E Oklahoma LivingWise® Program in our program center from the ground up. Working in conjunction with OG&E, we identified goals, desired outcomes of the program, and specific materials' customization. The result is a stimulating program that delivers significant and measurable resource savings. The OG&E Oklahoma LivingWise® Program features a proven blend of innovative education, comprehensive implementation services, and hands-on activities to put efficiency knowledge to work in homes throughout the OG&E service territory.

The OG&E Oklahoma LivingWise® Program is a reflection of true teamwork. On behalf of the entire implementation team at AM Conservation, I would like to thank you for the opportunity to design and implement the OG&E Oklahoma LivingWise® Program. It has been a pleasure working with you. I look forward to many more years of program success.

Sincerely,

Josh Levig
Program Manager



Rodney Shelton
Senior Director of Business Development

Lee Moran
Senior Program Manager, PMP®, CEM®

Program Team

Program Team

The success of the OG&E Oklahoma LivingWise® Program is owed to a cross-functional implementation team chosen specifically to meet the goals of the program. We incorporated both a PMP® certified Program Manager and a CEM® designated energy analyst to ensure the program hits key milestones and delivers results. These thought leaders are supported by an integral mix of specialists working in unity to accomplish your program objectives. The OG&E Oklahoma LivingWise® Program implementation team consisted of the following:

Outreach

Our outreach team is the face of the OG&E Oklahoma LivingWise® Program, introducing teachers to the program, and providing support throughout implementation to guarantee the program's success in the classroom. This group builds relationships and keeps teachers engaged in program execution year after year.

Graphic Design and Marketing

Expertly-designed kits and program materials are a result of our Graphic Design and Marketing teams. This group provides brand alignment and marketing strategies to ensure program branding is within guidelines. Additionally, this team facilitates copy and art direction and works with education to develop end-user activities.

Education

Led by a Ph.D. educator having both classroom and administration leadership experience, this team is responsible for the development of educational content as well as classroom energy literacy and engagement. The group also ensures the program's content is aligned with state expectations in science, math, and language as well as the rigorous expectations of STEM (Science, Technology, Engineering, and Math).

Information Technology

We leave IT strategy and cyber security in the hands of our experts. This team built and manages the integrated systems responsible for seamlessly blending operations, driving automation, and maximizing participation in the OG&E Oklahoma LivingWise® Program. This group provides the managed data services and software in support of outreach, enrollment, order processing, fulfillment, data collection and reporting.

Warehouse and Logistics

Last but not least, our warehouse and logistics teams guarantee OG&E Oklahoma LivingWise® program materials reach the classroom on-time and without errors. This group provides printing, purchasing, production, quality assurance & control, warehousing and shipping for all program materials. Additionally, this team ensures that all materials are consistent with orders and confirms delivery.

Program Impact

"AM Conservation utilizes an extensive network of educators for program feedback. This feedback ensures that educational components meet the changing needs of educators, keep information relevant to students, and provide increased energy literacy for program participants.

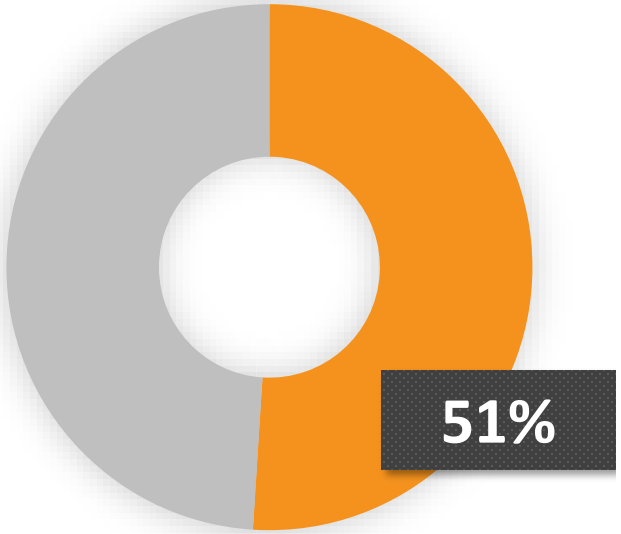
The OG&E Oklahoma LivingWise® Program has had a significant impact within the community. As illustrated on the next pages, the program successfully educated participants about energy and water efficiency while generating resource savings through the installation of efficiency measures in homes. Home survey information was collected to track projected savings and provide household consumption and demographic data. Program evaluations and comments were collected from teachers, students, and parents.

Home Survey

Upon completion of the program, participating families are asked to complete a home survey to assess their resource use, verify product installation, provide demographic information, and measure participation rates. A few samples of questions asked are below while a complete summary of all responses is included in the appendices.

Did you work with your family on this program?

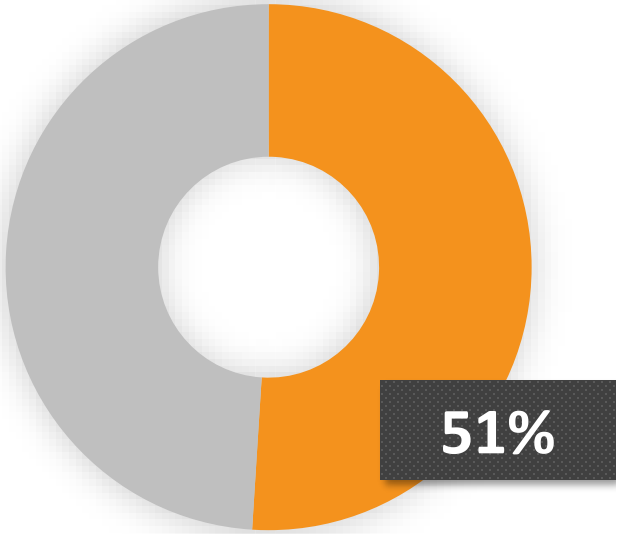
Yes 51%, No 49%



Students who indicated they worked with their family on the program.

Did your family change the way they use energy?

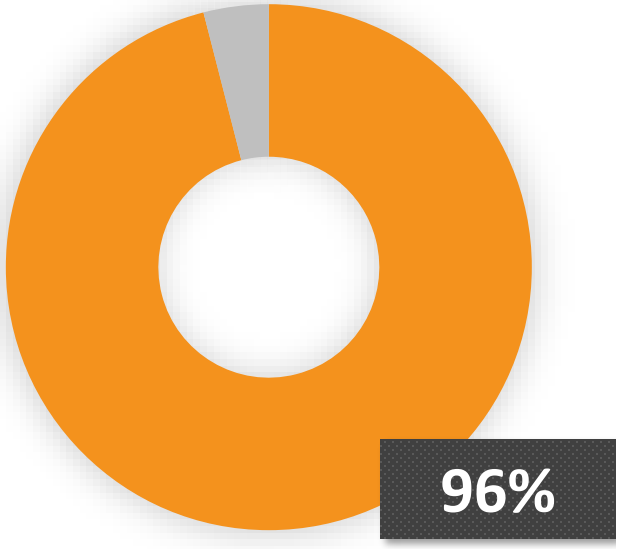
Yes 51%, No 49%



Students who indicated their family changed the way they use energy.

Students who rated the program Okay, pretty good and great.

Okay to Great 96%, Not good 4%



Students who rated the program Okay, pretty good and great.

Teacher Feedback

“Students were excited about the kit items such as the smart strip and night light, and even the bag. Many carry them to school each day.”

Luann Gilbert, Teacher
Earlywine Elementary School

Program Impact

Home Activities

As part of the program, parents and students installed resource efficiency measures in their homes. They also measured the pre-existing devices to calculate savings that they generated. Using the family habits collected from the home survey as the basis for this calculation, 8,811 households are expected to save the following resource totals. Savings from these actions and new behaviors will continue for many years to come.

Projected Resource Savings

Number of Participants:	8,811		
	Annual	**Lifetime**	
Projected reduction from Showerhead retrofit:	538,388	5,383,885	kWh
Product Life: 10 years	13,156,114	131,561,143	gallons
Projected reduction from Bathroom Aerator retrofit:	110,852	1,108,515	kWh
Product Life: 10 years	2,839,839	28,398,394	gallons
Projected reduction from Kitchen Aerator retrofit:	63,881	638,805	kWh
Product Life: 10 years	1,636,518	16,365,176	gallons
Projected reduction from two LED Lightbulbs retrofit:	122,691	1,594,986	kWh
Product Life: 13 years			
Projected reduction from Water Heater Setback:	14,770	29,541	kWh
Product Life: 2 years			
Projected reduction from Advanced Power Strip:	937,907	9,379,067	kWh
Product Life: 10 years			
TOTAL PROGRAM SAVINGS:	**1,788,489**	**18,134,800**	**kWh**
	17,632,471	**176,324,713**	**gallons**
TOTAL PROGRAM SAVINGS PER HOUSEHOLD:	**203**	**2,058**	**kWh**
	2,001	**20,012**	**gallons**
TOTAL PROGRAM kW DEMAND REDUCTION:			
Showerhead:	55.94985		
Bathroom Faucet Aerator:	11.54241		
Kitchen Faucet Aerator:	6.60825		
Two LED Light Bulbs:	16.47657		
Water Heater Setback:	1.32165		
Advanced Power Strip:	107.40609		
Total:	**199**		
TOTAL PROGRAM DEMAND REDUCTION PER HOUSEHOLD:	**0.0226**		

Program Impact

Teacher Program Evaluation

Program improvements are based on participant feedback received. One of the types of feedback obtained is from participating teachers via a Teacher Program Evaluation Form. They are asked to evaluate relevant aspects of the program and each response is reviewed for pertinent information. The following is feedback from the Teacher Program Evaluation for the OG&E Oklahoma LivingWise® Program.

Teacher Response

100% of responding teachers indicated they would conduct the program again given the opportunity.
100% of responding teachers indicated they would recommend the program to their colleagues.

What did you like best about the program?

"I enjoyed learning right along with my students about conserving energy. I also liked the activities to get them more involved." **Brandi Humphries, Pioneer - Pleasant Vale Elementary School**

"The students loved their tool kits and taking them home. It gave them a chance to tell family about what they learned." **Maria Castro, Overholser Elementary School**

"Students loved the kits and sharing them with their families. They loved reading the student guide in class and highlighting important information." **Bridget Borges, Chaffin Middle School**

What would you change about the program?

"Nothing right now. This is my first time participating and really enjoyed it." **Brandi Humphries, Pioneer - Pleasant Vale Elementary School**

"Lengthen the due date. The best time for us to use it is the end of the year after state testing." **Daniel Fritz, Briarwood Elementary School**

"I think it is perfect and have been using it for years. the students love it!" **Bridget Borges, Chaffin Middle School**

Parent/Guardian Program Evaluation

Parent involvement with program activities and their children is of paramount interest to both utilities and teachers in the program. When parents take an active role in their child's education it helps the schools and strengthens the educational process considerably. When students successfully engage their families in retrofit, installation, and home energy efficiency projects, efficiency messages are powerfully delivered to two generations in the same household. The program is a catalyst for this family interaction, which is demonstrated by feedback from Parent/Guardian Program Evaluations in each program. The following is feedback from the Parent/Guardian Program Evaluations for the OG&E Oklahoma LivingWise® Program.

Parent Response

100% of participating parents indicated that the program was easy to use.
100% of participating parents indicated they would continue to use the kit items after the completion of the program.
100% of participating parents indicated they would like to see this program continued in local schools.

Which aspect of the program did you like best?

"I love that they are given an energy saving kit to take home to talk about and install with their family." **Cora Winterscheid, Strother Elementary School**

"Honestly... The excitement on my child's face. The fact that she learned so much." **Cathy Waybourn, Strother Elementary School**

Are there any comments you would like to express to your child's program sponsor?

"This is a great program for the students. Great job!" **Cora Winterscheid, Strother Elementary School**

"Thank you for the opportunity." **Cathy Waybourn, Strother Elementary School**

Projected Savings

Projected Savings from Showerhead Retrofit

Showerhead retrofit inputs and assumptions:		
Number of Participants:	8,811	[1]
Deemed kWh Savings per Participant	61.10413	kWh[2]
Deemed kW Savings per Participant	0.00635	kW[2]
Deemed Water Gallon Savings per Participant	1,493.14655	gallons[2]
Estimated Useful Life	10.00	years[2]
Projected Energy Savings:		
Showerhead retrofit projects an annual reduction of:	538,388.489	kWh[3]
Showerhead retrofit projects a net lifetime reduction of:	5,383,885	kWh[4]
Projected Demand Reduction Savings:		
Showerhead retrofit projects an annual reduction of:	55.950	kW[5]
Projected Water Savings:		
Showerhead retrofit projects an annual reduction of:	13,156,114.252	gallons[6]
Showerhead retrofit projects a lifetime reduction of:	131,561,142.521	gallons[7]

[1] Reported by Participants
[2] 2023 EMV Report
[3] Deemed kWh X Participants
[4] Deemed kWh X Participants X EUL
[5] Deemed kW X Participants
[6] Deemed gallons X Participants
[7] Deemed gallons X Participants X EUL

Projected Savings from Bathroom Faucet Aerator Retrofit

Bathroom Faucet Aerator retrofit inputs and assumptions:		
Number of Participants:	8,811	[1]
Deemed kWh Savings per Participant	12.58104	kWh[2]
Deemed kW Savings per Participant	0.00131	kW[2]
Deemed Water Gallon Savings per Participant	322.30614	gallons[2]
Estimated Useful Life	10.00	years[2]
Projected Energy Savings:		
Bathroom Faucet Aerator retrofit projects an annual reduction of:	110,851.543	kWh[3]
Bathroom Faucet Aerator retrofit projects a net lifetime reduction of:	1,108,515	kWh[4]
Projected Demand Reduction Savings:		
Bathroom Faucet Aerator retrofit projects an annual reduction of:	11.542	kW[5]
Projected Water Savings:		
Bathroom Faucet Aerator retrofit projects an annual reduction of:	2,839,839.400	gallons[6]
Bathroom Faucet Aerator retrofit projects a lifetime reduction of:	28,398,393.995	gallons[7]

[1] Reported by Participants
[2] 2023 EMV Report
[3] Deemed kWh X Participants
[4] Deemed kWh X Participants X EUL
[5] Deemed kW X Participants
[6] Deemed gallons X Participants
[7] Deemed gallons X Participants X EUL

Projected Savings

Projected Savings from the Kitchen Faucet Aerator Retrofits

Kitchen Faucet Aerator retrofit inputs and assumptions:		
Number of Participants:	8,811	[1]
Deemed kWh Savings per Participant	7.25009	kWh[2]
Deemed kW Savings per Participant Kit	0.00075	kW[2]
Deemed Water Gallon Savings per Participant	185.73574	gallons[2]
Estimated Useful Life	10.00	years[2]
Projected Energy Savings:		
Kitchen Faucet Aerator retrofit projects an annual reduction of:	63,880.543	kWh[3]
Kitchen Faucet Aerator retrofit projects a net lifetime reduction of:	638,805	kWh[4]
Projected Demand Reduction Savings:		
Kitchen Faucet Aerator retrofit projects an annual reduction of:	6.608	kW[5]
Projected Water Savings:		
Kitchen Faucet Aerator retrofit projects an annual reduction of:	1,636,517.605	gallons[6]
Kitchen Faucet Aerator retrofit projects a lifetime reduction of:	16,365,176.051	gallons[7]

[1] Reported by Participants
[2] 2023 EMV Report
[3] Deemed kWh X Participants
[4] Deemed kWh X Participants X EUL
[5] Deemed kW X Participants
[6] Deemed gallons X Participants
[7] Deemed gallons X Participants X EUL

Projected Savings from Two LED Light Bulbs Retrofit

Two LED Light Bulbs retrofit inputs and assumptions:		
Number of Participants:	8,811	[1]
Deemed kWh Savings per Participant	13.92478	kWh[2]
Deemed kW Savings per Participant	0.001870	kW[2]
Estimated Useful Life	13.00	years[2]
Projected Energy Savings:		
LED Light Bulb retrofit projects an annual reduction of:	122,691.237	kWh[3]
LED Light Bulb retrofit projects a net lifetime reduction c	1,594,986	kWh[4]
Projected Demand Reduction Savings:		
LED Light Bulb retrofit projects an annual reduction of:	16.477	kW[5]

[1] Reported by Participants
[2] 2023 EMV Report
[3] Deemed kWh X Participants
[4] Deemed kWh X Participants X EUL
[5] Deemed kW X Participants

Projected Savings

Projected Savings from Water Heater Setback

Water Heater Setback		
Number of Participants:	8,811	[1]
Deemed kWh Savings per Participant	1.67636	kWh[2]
Deemed kW Savings per Participant	0.00015	kW[2]
Estimated Useful Life	2.00	years[2]
Projected Energy Savings:		
Water Heater Setback has an annual reduction of:	14,770.4080	kWh[3]
Water Heater Setback has a net lifetime reduction of:	29,541	kWh[4]
Projected Demand Reduction Savings:		
Water Heater Setback has an annual reduction of:	1.3217	kW[5]

[1] Reported by Participants

[2] 2023 EMV Report

[3] Deemed kWh X Participants

[4] Deemed kWh X Participants X EUL

[5] Deemed kW X Participants

Projected Savings from Advanced Power Strip

Advanced Power Strip		
Number of Participants:	8,811	[1]
Deemed kWh Savings per Participant	106.44725	kWh[2]
Deemed kW Savings per Participant	0.01219	kW[2]
Estimated Useful Life	10.00	years[2]
Projected Energy Savings:		
Advanced Power Strip has an annual reduction of:	937,906.7198	kWh[3]
Advanced Power Strip has a net lifetime reduction of:	9,379,067	kWh[4]
Projected Demand Reduction Savings:		
Advanced Power Strip has an annual reduction of:	107.4061	kW[5]

[1] Reported by Participants

[2] 2023 EMV Report

[3] Deemed kWh X Participants

[4] Deemed kWh X Participants X EUL

[5] Deemed kW X Participants

Home Check-Up

1 How many people live in your home (including you)?	
1	0%
2	4%
3	14%
4	30%
5	28%
6	13%
7+	10%
2 How is your water heated?	
Natural Gas	39%
Electricty	43%
Propane	17%
3 Does your home have a dishwasher?	
Yes	77%
No	23%
4 How many half bathrooms are in your home?	
0	69%
1	24%
2	4%
3	1%
4+	1%
5 How many full bathrooms are in your home?	
1	26%
2	59%
3	11%
4	3%
5+	1%
6 Which fuel is used as the main source of energy to heat your home?	
Natural Gas	28%
Electricity	57%
Heating Oil	2%
Wood	1%
Propane	8%
Other	3%
7 What type of air conditioning unit do you have?	
Central Air Conditioner	77%
Evaporative Cooler	4%
Room Unit	15%
Don't Have One	4%
8 What type of home do you live in?	
Single Family home	87%
Multi-Family Home/Apartment Building	13%
9 Was your home built before 1992?	
Yes	47%
No	53%
10 Is your home owned or rented?	
Owned	77%
Rented	23%

Home Activities

1 Did your family install the new High-Efficiency Showerhead?	
Yes	36%
No	64%
2 Did your family install the new Bathroom Faucet Aerator?	
Yes	28%
No	72%
3 Did your family install the new Kitchen Faucet Aerator?	
Yes	27%
No	73%
4 Did your family install the first 9-watt LED Light Bulb?	
Yes	54%
No	46%
5 Did your family install the second 9-watt LED Light Bulb?	
Yes	46%
No	54%
6 Did your family install the Advanced Power Strip in your home?	
Yes	64%
No	36%
7 If you answered "yes" to question 6, where did you install your Advanced Power Strip?	
TV System	28%
Computer System	12%
Other	61%
8 If you answered "yes" to question 6, did you received help from your parents?	
Yes	46%
No	54%
9 Did your family raise the temperature on your refrigerator?	
Yes	19%
No	81%
10 How much did your family turn down the thermostat in winter for heating?	
1 - 2 Degrees	13%
3 - 4 Degrees	18%
5+ Degrees	13%
Didn't Adjust Thermostat	56%

11 How much did your family turn up the thermostat in summer for cooling?	
1 - 2 Degrees	14%
3 - 4 Degrees	20%
5+ Degrees	13%
Didn't Adjust Thermostat	53%
12 Did your family lower your water heater settings?	
Yes	15%
No	85%
13 Did you work with your family on this program?	
Yes	50%
No	50%
14 Did your family change the way they use energy?	
Yes	51%
No	49%
15 How would you rate the LivingWise Program?	
Great	39%
Pretty Good	35%
Okay	22%
Not so Good	4%

Teacher Program Evaluation Data

1 The materials were clearly written and well organized.

Strongly Agree	71%
Agree	29%
Disagree	0%
Strongly Disagree	0%

2 The products in the kit were easy for students to use.

Strongly Agree	62%
Agree	38%
Disagree	0%
Strongly Disagree	0%

3 Student indicated that their parents supported the program.

Yes	95%
No	5%

4 Would you conduct this program again?

Yes	100%
No	0%

5 Would you recommend this program to other colleagues?

Yes	100%
No	0%

6 If my school is eligible for particpation next year, I would like to enroll.

Yes	100%
No	0%

Parent Program Evaluation Data

1 Was the Program easy for you and your child to use?

Yes	100%
No	0%

2 Will you continue to use the Kit items after the completion of the Program?

Yes	100%
No	0%

3 Would you like to see this Program continued in local schools?

Yes	100%
No	0%

Participant List

School Name	Teacher	Students
Adams Elementary School	Misty Owings	28
Adams Elementary School	Joni Williams	28
Belfonte Elementary School	Erin Parks	4
Belle Isle Middle School	Elizabeth Maples	113
Bokoshe Elementary School	Angela Rosa	20
Boulevard Christian School	Bernadette Beattye	5
Braggs Elementary School	Cyndi Bailey	17
Briarwood Elementary School	Daniel Fritz	75
Bridgestone Intermediate School	Michael Nethercot	52
Bridgestone Intermediate School	John Cheek	52
Bridgestone Intermediate School	Toby Goforth	51
Bridgestone Intermediate School	Aubree Troye	53
Calera Elementary School	Lisa Bishop	80
Cashion Elementary School	Ctaci Slovacek	20
Cashion Elementary School	Hannah Johnson	20
Cashion Elementary School	Jenny Clifford	20
Central Elementary School	Christine Clay	25
Central Elementary School	Shawna Jackson	25
Central Elementary School	Cassidy Malm	25
Central Elementary School	Courtney Powers	25
Central Oak Elementary School	Caitlyn Anderson	23
Central Oak Elementary School	Caitlyn Anderson	50
Central Oak Elementary School	Lesli Arnold	23
Central Oak Elementary School	Lesli Arnold	50
Charles Evans Elementary School	Leslie Smith	24
Charles Evans Elementary School	Gabby McCarty	23
Charles Evans Elementary School	Emily Stinson	23
Checotah Intermediate School	Tina Womack	90
Chisholm Elementary School	Lisa Earl	25
Chisholm Elementary School	Mikalyn Swanson	25
Chisholm Elementary School	Ryan Nall	26
Chisholm Elementary School	Lisa Earl	40
Chisholm Elementary School	Ryan Nall	40
Choctaw Elementary School	Angela Horton	16
Choctaw Elementary School	Juli Weatherly	17
Choctaw Elementary School	Angela Horton	19
Collins Elementary School	Ashley McGovran	47
Collins Elementary School	Heather Adams	68
Coronado Heights Elementary School	Alice Downing	29
Coronado Heights Elementary School	Raylynna Soto	25
Coronado Heights Elementary School	Christine Wilson	25
Coyle Elementary School	Kayla Mcfee	20
Crescent Elementary School	Tammy Payne	22
Crescent Elementary School	Audra Branson	22
Darlington Elementary School	Pam Garner	24
Davis Middle School	Daleen Jones	17
Davis Middle School	Dustin Hammons	18
Davis Middle School	Jeff Mapes	18
Davis Middle School	Sarah Waters	16
Dickson Upper Elementary School	Emile Winchester	100
Earl Harris Elementary School	Youmi Carroll	26
Earl Harris Elementary School	Nancy Summers	26
Earl Harris Elementary School	Karla White	27
Earl Harris Elementary School	Heather Radichel	26
Earl Harris Elementary School	Elizabeth Bryan	26
Earlywine Elementary School	Luann Gilbert	63
Eastlake Elementary School	Kristin Marlar	75
Emmanuel Christian School	Melodee Schneider	23
Epic Charter Schools	Shariece Tate	23
Eufaula Elementary School	Tami Snow-Cantrell	70
Fort Gibson Intermediate Elementary School	Jimmie Hammontree	42
Fort Gibson Intermediate Elementary School	Karlee Ritchie	43
Fort Gibson Intermediate Elementary School	Amy Hasler	44
Glenpool Intermediate School	Danny Webb	70
Good Shepherd Lutheran School	Marla Junghanns	9
Good Shepherd Lutheran School	Linda Harke	6
Good Shepherd Lutheran School	Linda Harke	11

Participant List (cont.)

School Name	Teacher	Students
Grove Elementary School	Heather Harper	65
Guthrie Upper Elementary School	Rachel Gibson	130
Guthrie Upper Elementary School	Michele Roach	130
Healdton Elementary School	Natasha Moore	28
Heavener Elementary School	Lacey Dyer	22
Heavener Elementary School	Shelly Brown	22
Heavener Elementary School	Tiffany Kirby	21
Heavener Elementary School	Shelly Brown	60
Hilldale Upper Elementary School	Sally Nixon	72
Holmes Park Elementary School	Lesli Whillock	50
Homer Elementary School	Calli-Jo Presley	70
Horace Mann Elementary School	Alyssa Mcgrew	23
Horace Mann Elementary School	ReAnna McCRee	22
Independence Middle School	Heather Cromwell	60
Independence Middle School	Amy Rice	62
Independence Middle School	Tina Treat	30
Independence Middle School	Sandy Winn	26
Independence Middle School	Erin Harris	62
Independence Middle School	Laura Reilly	60
Independence Middle School	Kacy McLemore	62
Jefferson Elementary School	Kenny Tudor	95
Jefferson Elementary School	T Rateliff	94
Jefferson Elementary School	Bryan Karinshak	60
John Rex Charter School	Kristin Lawson	70
Kennedy Elementary School	Stephanie Cobb	20
Kennedy Elementary School	Kristina Rodgers	16
Kiefer Upper Elementary	Lauren Wynn	75
Kiefer Upper Elementary	Lisa Brown	70
Kingsgate Elementary School	Arica Dick	77
Kingsgate Elementary School	Arica Dick	75
Kingston Elementary School	Lindsey Dowdy	18
Kingston Elementary School	Alison Clowers	19
Kingston Elementary School	Aspen Thompson	19
Kingston Elementary School	Macayla Ortega	19
Kingston Elementary School	sara carter	19
Konawa Elementary School	Amity Carter	42
Kremlin-Hillsdale Elementary School	Heather Carson	26
Latta Middle School	Jill Bates	60
Liberty Elementary School	Stefanie Gilbert	42

School Name	Teacher	Students
Liberty Mounds Elementary School	Burton McLain	30
Lincoln Elementary School	Andrea Burris	9
Lincoln Elementary School	Crystal Clapp	25
Lincoln Elementary School	Sarah Eckhardt	25
Lincoln Elementary School	Annalisa Roggow	25
Little Axe Elementary School	Robin Jones	90
Lomega Elementary School	Makaly Cranford	17
Lone Grove Intermediate School	Jennifer Dobbins	135
Madison Elementary School	Brittany Arnold	20
Madison Elementary School	Taylor Kirtley	60
Mannsville Elementary School	Bret Willard	22
Maple Elementary School	Shana Thiel	17
Maysville Elementary School	Tiffani Ray	25
Maysville Elementary School	Jessica Dean	28
McKinley Elementary School	JILL PERRY	70
Medford Elementary School	Debbie George	31
Medford Elementary School	HALEY EDGAR	20
Meeker Elementary School	Dalaina Self	29
Meeker Elementary School	Jocie Wilson	29
Monroe Elementary School	Kathryn Nelson	19
Morrison Elementary School	Tiffany Schlehuber	50
Moss Elementary School	MORGAN TEAGUE	20
Muldrow Middle School	JAMIE PATTERSON	105
Nicoma Park Intermediate School	Katherine (Katie) Ethridg	1
Nicoma Park Intermediate School	Terry Patten	110
Nicoma Park Intermediate School	Terry Patten	80
Nicoma Park Intermediate School	Tanner Johnson	80
North Rock Creek Schools	Luci Copelin	66

Participant List (cont.)

School Name	Teacher	Students
North Rock Creek Schools	Luci Copelin	74
Northmoor Elementary School	Keri Snyder	58
Northwood Elementary School	Kathleen White	23
Northwood Elementary School	ABBY LOZANO	23
Northwood Elementary School	ASHLEE HUNTER	23
Northwood Elementary School	JANICE HARVEY	23
Northwood Elementary School	JENNA POLLOCK	23
Oak Hall Episcopal School	Amy Flanagan	12
Olive Elementary School	Gracie Wooden	40
Overholser Elementary School	Natilee Clayton	25
Overholser Elementary School	Maria Castro	26
Overholser Elementary School	Stacie McGrew	28
Pansy Kidd Middle School	Kenneth Braden	140
Pershing Elementary School	Heather Morrison	55
Pershing Elementary School	Annetta Custer	26
Pershing Elementary School	Brandon Cochran	24
Pioneer - Pleasant Vale Elementary School	Brandi Humphries	20
Plainview Intermediate School	Kelley Simmons	122
Plaza Towers Elementary School	Amanda Terrill	21
Plaza Towers Elementary School	Jennifer Spear	22
Plaza Towers Elementary School	Brianne Adams	22
Ridgecrest Elementary School	Morgan Cook	22
Ridgecrest Elementary School	Mamyme Mockabee	21
Ringling Elementary School	Aaron Blackwell	28
Ringling Elementary School	Aaron Blackwell	50
Ringwood Elementary School	Susan Newman	30
Riverside Elementary School	Niki Spohn	21
Rollingwood Elementary School	Kara Conner	22
Roosevelt Middle School	Marvin Green	260
Roosevelt Middle School	Daniel Dickerson	260
Saint Joseph Catholic School	David Adams	8
Santa Fe South Elementary School - Penn Ave	Aidee Jimenez	100

School Name	Teacher	Students
Schwartz Elementary School	Christy Combs	52
Seiling School	Anna Nelson	34
Shady Point School	Danny Wann	12
Soldier Creek Elementary School	Elisha Ashley	100
Sooner Elementary School	Jennifer Stevens	65
South Lake Elementary School	Sarah French	125
Southeast Middle School	Passion Bradley	150
Southeast Middle School	Dru Humphrey	100
Southwest Covenant School	Lynna Brown	40
Springer Elementary School	Lora Lents	18
St. John Nepomuk Catholic School	Beth Sprague	25
St. Joseph Catholic School	Kim Zaloudek	10
Strother Elementary School	Jennifer Smith	35
Sulphur Intermediate Elementary School	Lacey Doty	110
Taft Elementary School	Jessica Singley	24
Taft Elementary School	Elizabeth Regier	23
Trinity School	Morgan Moffett	26
Tulakes Elementary School	Gracie Kitzel	95
Vanoss Elementary School	Sarah Francois	52
Wanette Elementary School	Amber Hinton	15
Washington Elementary School	Kristen Byrd	76
Washington Irving Elementary School	Shawna Shorb	70
Webster Middle School	Edwin Rodriguez	1
Webster Middle School	Veronica Curry	1
Webster Middle School	Vincent Pacheco	1
Webster Middle School	Mark Walker	1
Willard Grade Center	Kylar Merrell	90
Willard Grade Center	Jennifer Williams	90
Willard Grade Center	Mindy Direen	15
Wilson Elementary School	Nadean Melton	15
Wilson Elementary School	Linsey Newport	14
Wilson Elementary School	Liz Harper	15

Participant List (cont.)

School Name	Teacher	Students
Wilson Elementary School	Amanda Stearns	22
Winding Creek Elementary School	Irma Rodriguez	85
Woodward Christian Academy	Robert Dwinelle	8

Total	8811

7.4 Water and Emissions Methodology

Methodology to estimate a consistent, output-based emissions and fresh water savings rate from OG&E's operations

Background:

In an annual report, OG&E represents Demand Program emissions and water savings for The Oklahoma Corporation Commission. The following estimation methodology is used to maintain a consistent and reliable representation of this basis. Importantly, this methodology allows water and emissions to be compared on an equal footing due to the inclusion of only parameters under OG&E's direct operational control. For the Demand Program, an estimate is needed for: fresh water use, and emissions of nitrogen oxides (NO_x), sulfur dioxide (SO_2) & carbon dioxide-equivalents (CO_2e).

Assumptions:

1. Fresh water use and emission rates are derived from all power plants owned and operated by OG&E, including wind, solar, and fossil-fueled (natural gas and coal).
2. OG&E has direct control (i.e., is the operator) over these facilities and direct access to their water use, emissions, and power generation information.
3. Purchased power (from any source or state) is not part of this methodology as the associated water use and emissions are not accounted for by OG&E in regulatory programs or permits.
4. Renewable Emissions Credits (RECs) are not part of this calculation as they only pertain to CO_2e emissions and wind and solar generation, not part of any regulatory program, not certified and would be inconsistent with other environmental benefit estimations i.e., water conservation.

Calculation:

Fresh water use is based on the amount of water lost due to evaporation in the power generation process. Usage data is obtained from quality assured measurement systems which provide information for reporting to the Oklahoma Water Resources Board (OWRB) regarding water use governed by facility water rights permits. Water usage data for Frontier Power Plant is not reported to OWRB because this facility purchases water from the City of Oklahoma City. Frontier water use data is metered as it comes into the facility and when it leaves the facility. Emissions data is obtained from the Continuous Emissions Monitors (CEMs) Data Acquisition Handling System (DAHS) that is quality assured and consistent with information available from the Clean Air Markets Division (CAMD) of the Environmental Protection Agency (EPA). Generation data (gross megawatt hours (MWhs)), are derived from the sum of the gross output from OG&E-operated fossil-fueled generating units and the gross output of OG&E-owned renewable generation. The gross generation for fossil-fueled units is obtained from the same CEMS system as the emission data. Total gross generation from the McClain Power Plant is not required by the EPA CEMS reporting program referenced above, therefore, it is obtained from OG&E's Generating Availability Data System (GADS) database, a North American Electric Reliability Corporation (NERC)-developed database. GADS is a mandatory industry program for conventional generating units that are 20 MW and larger and windfarms with a total installed capacity of 75MW or greater. Currently, solar generation is not part of the NERC mandatory reporting requirements, therefore, solar MWh data is obtained from reliable, accurate OG&E sources other than GADS.

The output-based water use and emission rates are derived by dividing measured fresh water use, and emissions of NO_x, SO_2, and CO_2e from OG&E-operated fossil-fueled facilities by *gross* power generation (MWhs) from OG&E-operated fossil-fueled and OG&E owned renewable generation facilities.

Each of these factors is multiplied by the energy savings in MWh during the Demand Program period resulting in gallons of fresh water and mass (pounds or short tons) of emissions avoided by the OG&E-owned generating fleet over the duration.