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CADMUS

2023 Georgia Power Commercial Program Portfolio Evaluation Report

October 1, 2024

Contents

1 Commercial Program Portfolio Summary

The portfolio of Commercial Energy Efficiency programs includes four individual programs which provide unique market interventions for Georgia Power's commercial customers. Energy efficiency program participation in the calendar year 2023 was almost 38,000 projects across the Prescriptive, Custom, Small Commercial Direct Install (SCDI), and Behavioral programs resulting in 135,619 MWh in verified net energy savings as shown in Table 1-1. The verified gross energy savings represents the measurable energy savings at the electric meter and the verified net energy savings considers attribution (free-riders), to represent a value of energy savings directly related to the program influence.

Table 1-1. 2023 Commercial Energy Efficiency Portfolio Achievements[1]

Program	Number of Projects	Reported kWh	Realization Rate	Verified Gross kWh	Net-to-Gross	Verified Net kWh
Prescriptive	1,369	102,901,172	115.2%	118,566,871	80.5%	95,446,331
Custom	165	42,225,026	109.6%	46,273,359	65.4%	30,262,776
SCDI	400	13,332,273	77.5%	10,333,776	95.9%	9,910,091
Behavioral	36,029	874,193	0%	0	100.0%	0
TOTAL	**37,963**	**159,332,664**[2]	**109.9%**	**175,174,006**	**77.4%**	**135,619,198**

BrightLine Group and Cadmus Group (the evaluation team) deployed a strategic and data-driven evaluation approach of the commercial programs with the objective to produce a rigorous and accurate assessment of the programs and enable confidence in results. The evaluation used industry standard strategies and approaches to allow for feedback in changing market environments. The evaluation team verified 2,255 measures across 313 implemented projects, and surveyed over 450 participants, 475 nonparticipating customers, and 58 contractors/distributors to evaluate the commercial program achievements. Commercial lighting hours of use (HOU) was a key evaluation research area with extensive on-site measure and verification (M&V) including measurement loggers installed for more than four weeks, HVAC interactive factors (IFs), in-service rates (ISRs), differences in wattage assumptions and coincidence factors (CFs).

The portfolio of Commercial Energy Efficiency programs is very popular with customers and contractors alike, receiving high marks for satisfaction and engagement with Georgia Power. Despite the outcome that the program fell short of their 2023 annual energy savings goal, the programs were operated in a cost-effective manner as shown in Section 6 of this report.

[1] Realization rates and Net-to-Gross values presented within this report are rounded to integer levels for clarity. Additionally for some tables in this report, total rows may not equal the sum of values due to rounding.

[2] Certified Demand-Side Management Programs, Fourth Quarter 2023 Program Status Report; Docket No. 44161 (Q42023 PSC Report)

1.1 Conclusions and Recommendations

1.1.1 Custom and Prescriptive Program

Conclusion 1: The Custom Program Net-to-Gross (NTG) ratio has historically changed a reasonable amount and is largely dependent upon the specific projects and customers in the evaluation year. These results may not be a reasonable estimate for future program years as implemented measures and projects will change every year and program cycle.

> Recommendation 1: Consider a multi-year rolling assessment of NTG or deem a reasonable NTG for the Custom program. Recent historical NTG trends find the Custom NTG closer to 80% than the 65.4% NTG found in this evaluation year.

Conclusion 2: This evaluation found under-reporting of energy savings for Prescriptive Lighting projects resulting from conservative HOU assumptions.

> Recommendation 2a: Consider updates to HOU assumptions for business types with the highest levels of misalignment. Detailed results of the HOU study by business type are included in Section 5.7 of the Commercial Lighting HOU analysis.

> Recommendation 2b: Provide additional guidance to contractors on when to apply the '24/7' characterization to further refine reported savings or introduce additional quality control processes to identify high usage lighting within specific space types.

Conclusion 3: There are opportunities for repeat/new participation as all Custom participants and 95% of Prescriptive participants noted they are 'somewhat' or 'very' likely to participate in a Georgia Power program again and 53% of nonparticipant respondents stated they are 'somewhat' or 'very' likely to participate in a Georgia Power program in the next 6 months. In addition, 57% of participants who responded to the survey stated that they have participated in a Georgia Power program in the past.

> Recommendation 3: Consider doing a directional analysis of follow-up opportunities that may exist amongst those customers who have participated in the commercial program over the past 3-4 years, including firmographic data of these customers. A possible outcome of the analysis would be an assessment of remaining potential across participants, measure types, business types, and location.

Conclusion 4: Repeat and future participation could be challenging to obtain, because many companies view energy use as a cost of doing business, and 46% of participants and 52% of nonparticipant respondents 'somewhat or strongly agree' with the statement that "We have made all the EE improvements we can without a substantial investment". In addition, 51% participants and 69% of nonparticipating respondents strongly or somewhat agreed with the statement "We view energy use as the cost of doing business and will use whatever amount of energy needed." Lastly, high initial costs and overall budget are the largest barriers to participation.

Conclusion 5: Seventy-five percent (75%) of nonparticipants noted that their business didn't have a corporate policy in place for energy efficiency, sustainability, or carbon reduction. Of the respondents that do have a corporate policy in place, a little more than half noted their business also has a return-on-investment (ROI) criteria for energy-efficient purchases.

> Recommendation 5a: Continue to explore new and different ways to communicate the long-term benefits of energy efficiency above and beyond the typical 'low-hanging fruit'. As the lighting market continues to transform, it will be important to educate customers on technologies that may have higher initial costs. Educating customers on the long-term benefits of lowering operating and maintenance costs will help customers see past initial cost concerns and help with new and repeat program participation.
>
> Recommendation 5b: Continue to market the many benefits of energy efficiency and the programs offered to help boost participation in those customers who don't have corporate policies that otherwise push the need for energy efficiency in their organization. Targeting discussions around ROI could encourage discussions in decision makers who have sustainability targets and policies in place in their organization.

Conclusion 6: Opportunities for savings associated with lighting measures are starting to decline as the lighting market continues to transform to predominantly LEDs. Responses from Trade Groups supported the suggestion that the lighting market is continuing to transform, and one-quarter of nonparticipants noted that they have installed energy-efficient products or equipment in the past year and of these, the majority were LEDs installations. Conversely, less than 2% of the lighting measure savings in 2023 through Georgia Power's Commercial program were lighting controls. It was noted in the Trade Group interviews that it can sometimes be difficult for customers to invest in controls when retrofitting to LEDs as the efficiency gains of controls are comparatively small when compared to the jump in efficiency gained by retrofitting to LEDs.

> Recommendation 6a: Georgia Power should lean into the remaining savings available from lighting measures, consider targeting segments such as local government or municipalities who may have been 'holding onto' old equipment but could be required to invest in efficient technologies with recent updates to federal standards and rules.

Recommendation 6b: Georgia Power should consider engaging in all lighting trade allies, including electrical distributors and lighting sales representatives. Consider "expedited" lighting incentives paid through lighting procurement cycle while maintaining customer program engagement.

Recommendation 6c: Increase marketing and customer information around advanced lighting controls as there is a lot of opportunity for future savings. Also focus on non-energy savings for lighting controls such as reduced maintenance costs, increased fixture life, improved light quality, and improved safety and security.

Conclusion 7: Participants are extremely satisfied with the program, with the highest satisfaction with the performance of the equipment installed and installation contractor. Satisfaction levels were very similar to the prior evaluation cycle with a slight increase in the 'rebate processing time' and the largest decrease in satisfaction with 'the cost savings realized due to the equipment you installed'. There was also a slight decrease with the 'ease of the application process.'

Conclusion 8: Satisfaction among participating contractors is high, with the 'clarity of program application requirements' and 'working with ICF staff' receiving the highest satisfaction ratings. The lowest satisfaction results were with 'the program's support for comprehensive projects' and the 'online application portal.'

Recommendation 8: Satisfaction with the 'experience with the online application portal' declined from the prior evaluation and is an area that Georgia Power should consider researching to ensure this decline doesn't continue.

Conclusion 9: Educating contractors about Georgia Power's programs and energy efficiency has a positive impact toward customer awareness and education. Most nonparticipating contractors (81%) indicate that they are actively promoting energy efficiency and 72% of participating contractors 'always' promote Georgia Power's program to customers. In addition, nonparticipating contractors stated that customers ask about or request energy efficiency products almost half of the time, indicating additional opportunities for program participation if contractors are educated about program opportunities. Of the nonparticipating contractors that were registered Trade Allies in 2021 or 2022, the top reason for why they did not register in 2023 was because they thought they were still registered (29%).

Recommendation 9: Contractors are the backbone of the Commercial Energy Efficiency Program (CEEP) and continued engagement with, and training of these contractors is key to program success. Continue to offer trainings for contractors, maintaining key attention on information beyond cost and energy savings to encourage implementation of higher cost measures. Ensure that the registered trade ally list is maintained and updated and conduct occasional outreach to contractors who are not engaging in the program.

1.1.2 Small Commercial Direct Install Program

Conclusion 10: Challenges identified in the 2020-2022 evaluation around a lack of accuracy in the work orders and incomplete communication from assessors to contractors persisted in 2023, causing contractors loss of profitability and inability to complete jobs as customers expected. Furthermore, these discrepancies affected the evaluated savings because the work orders and quantity of bulbs observed on site led to a reduction in evaluated savings.

Interviews with contractors and participant customer surveys showed both groups were satisfied with the program overall. All three contractors said the work order and reimbursement processes were easy, and 80% of customers expressed satisfaction with the program overall. However, as in the previous evaluation, the evaluation team found that inaccuracies with equipment counts and types and contact information on the work orders lessened the satisfaction of both contractors and customers. Contractors said that when they were unable to complete the job as planned due to incorrect work orders, it impacted their profitability and their relationships with customers. In the interview with the evaluation team, the implementation contractor, FCI Management, Inc. (FCI), said it meets regularly with each contractor to collect feedback.

A driver of discrepancies between reported and gross verified savings is the quantity of bulbs observed on-site versus that within the reported data. During desk reviews of sampled projects, the evaluation team was unable to match reported savings to project documentation savings. The majority (77%) of missing fixtures were due to clerical errors. The evaluation team found the measure counts in the tracking database were based on the initial site assessment and did not reflect the final work order. The evaluation team found a total of 11,950 bulbs among the 80 sampled sites. This is 482 bulbs fewer (or 4% less, with respect to reported values) than the reported 12,432 bulbs for those same sampled sites which yields a 96% ISR.

> Recommendation 10: Assessors should receive more site-specific coaching from FCI to ensure that the assessment documents recommend the proper upgrades and reflect the necessary details about the site—including correct contact information and equipment necessary to perform the installations—to facilitate a smooth installation process. In addition, it is recommended that the assessment report be updated to reflect the installed outcomes.

Conclusion 11: When participants were able to complete their projects as planned, they expressed high levels of satisfaction with the program, driven by the cost-sharing, the equipment, the clarity of the eligibility requirements/participation agreement and the experience with the installation contractors.

Most participating businesses (average of 81%) gave ratings of 8-10 when asked about their satisfaction of different program aspects. Altogether, when participants received their expected equipment as outlined by the audit and the program, they were satisfied with most other aspects of the program and the program design. When jobs were not completed as expected, participant satisfaction was lower, with customers citing issues with missing new equipment and a lack of communication from program staff to discuss issues participants encountered.

> Recommendation 11: Consider allowing contractors to perform the assessments themselves. This could create a more streamlined customer experience and enhance the engagement and investment in positive customer outcomes from contractors.

Conclusion 12: About half of participants are installing recommended improvements, but cost is limiting the ability of others to follow through on assessment recommendations.

Nearly half (46%) of respondents installed all of the recommended improvements, and 40% of respondents installed some of the recommended improvements. Three respondents who did not install all the recommended improvements said that financial constraints prevented them from doing so, and budget limitations was a frequently cited limiter of energy-efficient projects.

> Recommendation 12: Explore whether the program can offer a multi-stage installation process for customers with limited budgets, and institute a follow-up process in subsequent years for customers who only complete a portion of the installations.

Conclusion 13: Interactive factors contributed to lower realized energy savings and higher realized demand savings than reported.

Interactive factors were reported as 7.4% by Georgia Power for all projects. The evaluation team assigned an IF based on the project's building type and primary HVAC system space. The evaluation team found the average IF of sampled projects was lower than reported (3.8% vs 7.4%) for energy savings and higher than reported (14.8% vs 7.4%) for demand savings. As a result, lower energy savings were realized than reported and higher demand savings were realized than reported.

> Recommendation 13: Consider documenting HVAC system type during initial site assessments and implementing an IF based on HVAC system type for reported calculations of energy and demand savings.

Conclusion 14: Coincidence factors account for the greatest impact to low demand savings realization rates (RR).

As discussed in Section 3.4.1, The evaluation team relied on light logger analysis to measure the CF at sampled projects. The team found the summer CF to be an average of 47% lower than reported and the average winter CF to be 58% lower than reported. For measures that did not have available logger data, the evaluation team assumed summer CF values based on the project's building type and a single winter CF value based on the average of all logger findings.

> Recommendation 14: Include a CF term in summer and winter demand savings calculations based on evaluation findings.

1.1.3 Commercial Behavioral Program

This section presents the evaluation team's conclusions and recommendations for the Commercial Behavioral program based on the treatment and control group survey. While this program is in its second program cycle, the treatment and control groups were redesigned. Given that savings from behavioral programs tend to slowly increase over time and take one to two years to establish a steady state, the evaluation results may be more reflective of a program in its early stages.

Conclusion 15: Treatment customers found Business Energy Reports (BERs) useful, accurate and containing relevant business comparisons and the reports spurred positive energy efficiency actions and attitudes toward Georgia Power. Despite the encouragement to make energy efficiency actions, the treatment group did not report making energy efficiency upgrades at a more significant rate than the control group.

Respondents in both groups reported that they made energy-efficient upgrades and improvements in the past year: 55% treatment (n=118) and 43% control (n=74) however this difference was not significant. The types of equipment they installed or upgraded were also similar, with approximately three-quarters of respondents in each group making lighting upgrades.

Most treatment respondents strongly or somewhat agreed that the BERs are helpful (91%), easy to understand (85%), and provide accurate usage information (85%). Additionally, for 40% of treatment respondents who made upgrades, BERs were very important in their decision to make energy-saving upgrades. Lastly, treatment respondents were significantly more satisfied than control respondents with Georgia Power overall (average of 6.9 vs 5.9).

Respondents were less prone to agree that the BERs contained accurate comparisons to similar facilities (70%), that their company has followed tips from the BERs (62%), and only a minority agreed that they have installed recommended products (35%).

Conclusion 16: The new Energy Portal fostered awareness and interest in energy-efficient practices.

Most respondents used utility bills to track their energy use (88%) and treatment respondents found being able to see their energy itemization on their bill most useful (60%). The average satisfaction with the portal was a 7.5/10 with 56% of treatment respondents using the portal. Finally, Energy Portal users and report readers were more aware of Georgia Power programs and found energy efficiency more important for their business.

> Recommendation 16: Explore whether the portal can include more comparisons of similar businesses as suggested by participants. Additionally, include portal data in the BERs to encourage visits to the portal and track portal use.

Conclusion 17: As noted in the prior evaluation, the BERs have a significant impact on customer satisfaction and knowledge empowerment for customers who regularly read their reports. Treatment respondents, whether they regularly read their BERs or not, had higher overall satisfaction with Georgia Power. Treatment respondents who read BERs regularly indicated significantly higher levels of knowledge about saving energy.

Treatment respondents had higher overall satisfaction with Georgia Power than control respondents. Interestingly, treatment respondents who did not read BERs regularly had significantly higher overall satisfaction with Georgia Power (8.3, n=17) than control respondents (7.0, n=62). Regular BER readers also rated their knowledge of how to save energy higher (5.6, n=43) than the other groups (treatment who do not read BERs 4.8, n=24 and control 5.1, n=98).

Treatment respondents who read BERs overall gave significantly higher ratings for the importance of reducing energy costs compared to control respondents. Those who read the BER were significantly more likely than control respondents to say that they had made energy-efficient upgrades/improvements.

> Recommendation 17: Leverage the connectivity between the BERs and the Energy Portal and Georgia Power website to ensure that linkages to program incentives are consistent and complementary.

Conclusion 18: Although the Commercial Behavioral program in the 2023 program year did not yield statistically significant direct energy savings, the program demonstrated a positive contribution to cross-program participation and uplift savings, indicating its value as an engagement, education, and communication tool for the program portfolio.

The evaluation team found no statistically significant treatment effect from the billing analysis using 12 months of pre- and post-treatment data. The difference-in-differences model showed a small, non-significant decrease in energy consumption (p-value 0.76), while the post-only model suggested a non-significant increase (p-value 0.83). Given the high uncertainty of these estimates, it is inappropriate to assign verified savings, resulting in a realization rate of 0%.

Uplift savings, the additional energy savings achieved through cross-program participation, were 2.4 kWh per customer, totaling 87,104 kWh. Participation in the Commercial Behavioral program increased enrollment in other energy efficiency programs by 16% compared to the control group.

> Recommendation 18: Leverage the BERs to focus on energy savings opportunities through Geogia Power's existing programs to emphasize cross-participation over individual energy-savings actions.
>
> A very large share of program treatment participants found the business energy reports to be helpful, drove participation in the other certified programs, and increased satisfaction with Georgia Power; consequently, Georgia Power should consider continuing the program for non-energy savings reasons. One large hurdle is the current policy to critique cost-effectiveness at the program-level. The company may wish to consider the commercial portfolio from a holistic and synergistic perspective and either consider cost-effectiveness at the sector level and/or consider aggregating delivery streams under one program umbrella.

2 Commercial Energy Efficiency Program

The Commercial Energy Efficiency Program (CEEP) includes two programs which go-to-market in a cooperative manner for a large share of Georgia Power commercial customers: Commercial Custom (Custom) program and Commercial Prescriptive (Prescriptive) program. Participation in the Custom program from January to December 2023 included 165 unique projects[3]. Participation in the Prescriptive program from the same period included 1,369 unique projects. As shown in Table 2-1, the program achieved 125,709 MWh in verified net energy savings.

Table 2-1. 2023 Commercial Energy Efficiency Program Achievements

Component	Number of Projects	Reported kWh	Realization Rate	Verified Gross kWh	NTG	Verified Net kWh
Prescriptive	1,369	102,901,172	115.2%	118,566,871	80.5%	95,446,331
Custom	165	42,225,026	109.6%	46,273,359	65.4%	30,262,776
TOTAL	**1,534**	**145,126,199**	**113.6%**	**164,840,229**	**76.3%**	**125,709,107**

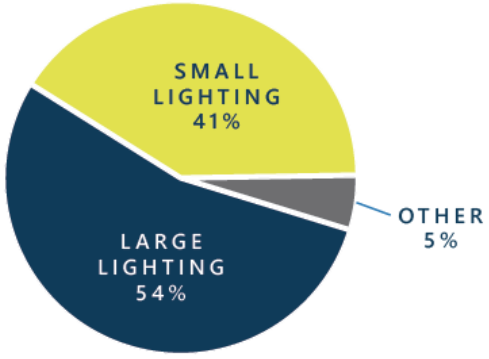
The Georgia Power Commercial Custom and Prescriptive energy efficiency programs remain the most impactful customer programs in Georgia Power's Demand Side Management (DSM) commercial sector portfolio. These two programs combined contributed more than 90% of the total commercial portfolio's energy savings and more than 50% of reported energy savings across all certified programs in 2023. Realization rates and NTG results for 2023 indicate accurate savings estimates and effective customer influence. The programs are very popular with commercial customers and contractors alike, receiving high marks for satisfaction and engagement with Georgia Power staff and its implementation contractor, ICF International (ICF).

[3] Project total based on count of unique project numbers in VisionDSM tracking data as of March 21, 2024.

COMMERCIAL PRESCRIPTIVE PROGRAM

Program Participation

- 8,452 measures from 1,369 unique projects
- 95,446 net verified MWh saved



Evaluation Results

The Prescriptive program achieved a realization rate of **115.2%** for energy savings.

115.2%
for energy savings

Evaluation research determined a Net-to-Gross result of **80.5%** for the Prescriptive program.

Key Conclusions & Recommendations

CONCLUSION
Lighting equipment opportunities are declining as the market continues to transform to predominantly LEDs. Responses from Trade Groups, contractors and nonparticipants support this claim. Conversely, less than 2% of the lighting savings in 2023 were lighting controls.

RECOMMENDATION
Increase marketing and customer information around advanced lighting controls. Focus on non-energy savings for lighting controls such as reduced maintenance costs, increased fixture life, improved light quality, and improved safety and security.

CONCLUSION
Opportunities for repeat/new participation are available as all Custom participants and 95% of Prescriptive participants noted they are 'somewhat' or 'very' likely to participate in a Georgia Power program again. More than half of participants who responded to the survey stated that they have participated in a Georgia Power program in the past.

RECOMMENDATION
Consider doing a directional analysis of follow up opportunities that may exist amongst those customers who have participated in the Commercial Program over the past 3-4 years with the goal of assessing remaining potential across participants, measure types, and business types.

CONCLUSION
This evaluation found under-reporting of energy savings for prescriptive lighting projects resulting from conservative hours of use assumptions.

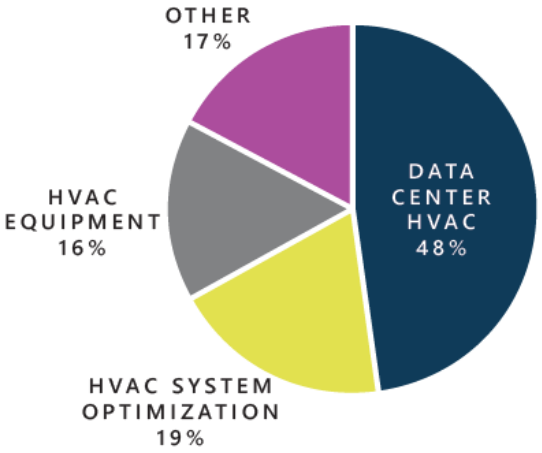
RECOMMENDATION Consider updates to Hours of Use assumptions for business types with the highest levels of misalignment.

RECOMMENDATION Provide additional guidance to contractors on when to apply the '24/7' characterization to further refine reported savings or introduce additional quality control processes to identify high usage lighting within specific space types.

COMMERCIAL CUSTOM PROGRAM

Program Participation

- 170 measures from 165 unique projects
- 30,263 net verified MWh saved



Evaluation Results

The Custom program achieved a realization rate of **109.6%** for energy savings.

109.6%
for energy savings

Evaluation research determined a Net-to-Gross result of **65.4%** for the Custom program.

Key Conclusions & Recommendations

CONCLUSION
The methods of estimating energy savings for the Custom program are accurate and employ an appropriate level of rigor. Smaller projects are generally estimated using engineering or quasi-prescriptive algorithms, where as larger project estimates employ more complex modeling.

RECOMMENDATION
Continue to thoroughly document sources, algorithms, and assumptions in use for custom savings estimates with rigorous QC for large projects.

CONCLUSION
Most nonparticipating contractors (81%) indicate that they are actively promoting energy efficiency and 72% of participating contractors 'always' promote the program to customers. In addition, nonparticipating contractors stated that customers ask about or request energy efficiency products almost half of the time.

RECOMMENDATION
Contractors are the backbone of the program and continued engagement with and training of these contractors is key to program success. Continue to offer trainings for contractors, maintaining key attention on information beyond cost and energy savings to encourage implementation of higher cost measures.

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2.1 Program Overview

The Commercial Energy Efficiency Program (CEEP), implemented by ICF International, is made up of two efforts: the Commercial Custom program (Custom) and the Commercial Prescriptive program (Prescriptive). The Custom program provides a platform for comprehensive energy efficiency projects in larger existing and new facilities that go beyond single measures and common, measure-level efficiency practices. The Custom program provides incentives for efficiency improvements not included in other Georgia Power commercial program offerings. All program incentives are based on the verified energy savings achieved for each project. The program does not define a specific list of eligible measures, but bases participation on the verifiable energy savings resulting from the measures or system improvements implemented. The 2023-2025 program offering builds on the existing Commercial Custom program, which was originally certified by the Commission as part of Georgia Power's 2010 DSM Application filing.

The goals of Georgia Power's Commercial Custom program include:

- Increasing customer acceptance and use of energy-efficient technologies and practices.
- Encouraging and supporting comprehensive energy efficiency projects that go beyond single measures and common efficiency practices.
- Obtaining verifiable, cost-effective, and long-term electrical energy and demand savings.

The Commercial Prescriptive program promotes the purchase of eligible high-efficiency equipment installed at qualifying customer facilities. Rebates offered through this program serve to reduce the incremental cost to upgrade to high-efficiency equipment over standard efficiency options for Georgia Power's commercial-class customers. The program includes equipment with easily calculated savings, provides straightforward and easy participation for customers, and allows for reduced evaluation, measurement & verification (EM&V) costs. The 2023-2025 program offering builds on the existing Commercial Prescriptive program, which was also originally certified by the Commission as part of Georgia Power's 2010 DSM Application filing.

The goals of the Commercial Prescriptive program include:

- Increasing awareness and customer demand for high-efficiency, energy-saving equipment.
- Increasing the availability and market penetration of energy-efficient equipment that will result in long-term energy savings and peak reductions.

For the purpose of the program-specific evaluation reports, the evaluation team has consolidated the reports for both the Prescriptive and Custom programs. The Prescriptive and Custom programs were evaluated as separate programs including distinct sample sizes, calculation of separate NTG ratios, highlighted accomplishments and recommendations, etc. However, because the two programs go-to-market as the "Georgia Power Commercial Energy Efficiency Program," the evaluation team consolidated information when it was applicable to both.

2.1.1 Program Measures

Table 2-2 lists a selection of prominent measures and offered incentives available through the program. For evaluation purposes, similar measures were grouped into strata according to size and end use.

Table 2-2. 2023 Commercial Energy Efficiency Program Qualifying Measures and Incentives

Evaluation Strata	Measure	Incentive
Large & Small Lighting	LED Screw-In[4]	$2-$4/Lamp
	LED Décor/Candelabra	$4-$10/Lamp
	TLEDs	$3/Lamp
	LED Troffer Fixture/Retrofit Kit	$15-$25/Fixture
	Linear Retrofit Kit	$10-$15/Fixture
	LED Can, Track, Pendant	$10/Fixture
	LED Exit Signs	$7/Fixture
	LED High Bay	$30-100/Fixture
	Lighting Occupancy Sensor	$7/Control
	Daylight Sensor	$25/Control
	Parking Garage LED Light	$30-50/Fixture
	LED Pole-Mounted Fixture	$10-120/Fixture
	Mogul Screw-Base HID Replacement	$15/Lamp
	New Construction Lighting	$0.04/kWh saved
Kitchen Equipment	Commercial Dishwasher	$250/Unit
	Commercial Fryer	$300/Vat
	Commercial Griddle	$125/Unit
	Commercial Combination Oven	$600/Unit
	Commercial Steamer	$700/Unit
	High-Efficiency Ventilation Hoods w/ Sensor Control	$500/HP
Refrigeration	Grocery Display Case LED Lighting	$30/Cooler Door
	Display Case Motion Sensor	$3/Sensor
	On-Demand Overwrappers	$110/Unit
	Anti-Sweat Refrigerated Humidistat	$15/Door

[4] Not available after June 30, 2023 due to Department of Energy backstop on general service lamps.

Evaluation Strata	Measure	Incentive
	Demand Defrost Controls	$40/Door
	Door Gasket Replacement	$30/Door
	ECM Compressor Fan Motor	$170/Unit
	High-Efficiency Compressor	$0.15/kBtu/h of Capacity
	High-Efficiency Evaporator Fan Motor	$90/Motor
	Evaporator Fan Controls	$100/Unit
	Low/Anti-Sweat Heater Case Doors	$50/Door
	Display Case Night Covers	$80/Case
	Open Display Case with Glass Door	$60/Door
	Strip Curtains	$50/Door or Curtain
HVAC / Motors / Hot Water	Small Air Conditioner (<65 kBtu/j)	$175 - $200/Unit
	Large Air Conditioner (>65 kBtu/j)	$15 - $40/Ton
	Small Heat Pump (<65 kBtu/j)	$400/Unit
	Large Heat Pump (>65 kBtu/j)	$80/Ton
	Smart, WiFi-Enabled Thermostat	$75/Unit
	Variable Frequency Drives (VFDs)	$50/HP
	Hotel Key Card Room Energy Control System	$80/Guest Room
	ECM on VAV Boxes	$50/Motor
	Variable Speed irrigation Pump	$50/HP
	Heat Pump Water Heater	$250/Unit
Custom and Building Tune-up	Custom Savings	$0.10/kWh saved

2.2 Participation and Achievements

Table 2-3 presents the numbers of measures, reported energy savings, and verified gross and net energy savings achieved for the Prescriptive and Custom Programs during the evaluation timeframe of January through December 2023. Demand savings achievements are presented in Table 2-4 and Table 2-5, for summer peak and winter peak periods respectively.

Table 2-3. 2023 Custom and Prescriptive Program Achievements – Energy

Component	Number of Projects[5]	Reported kWh[5]	Verified Gross kWh	Verified Net kWh	Annual Energy Savings Goal	% of Goal
Prescriptive	1,369	102,901,172	118,566,871	95,446,331	286,199,379	33%
Custom	165	42,225,026	46,273,359	30,262,776	68,047,906	44%
TOTAL	**1,534**	**145,126,199**	**164,840,229**	**125,709,107**	**354,247,285**	**35%**

Table 2-4. 2023 Custom and Prescriptive Program Achievements – Summer Peak Demand

Component	Number of Projects[5]	Reported kW[5]	Verified Gross Summer Peak kW	Verified Net Summer Peak kW
Prescriptive	1,369	16,450	16,066	12,933
Custom	165	4,711	5,620	3,676
TOTAL	**1,534**	**21,160**	**21,687**	**16,609**

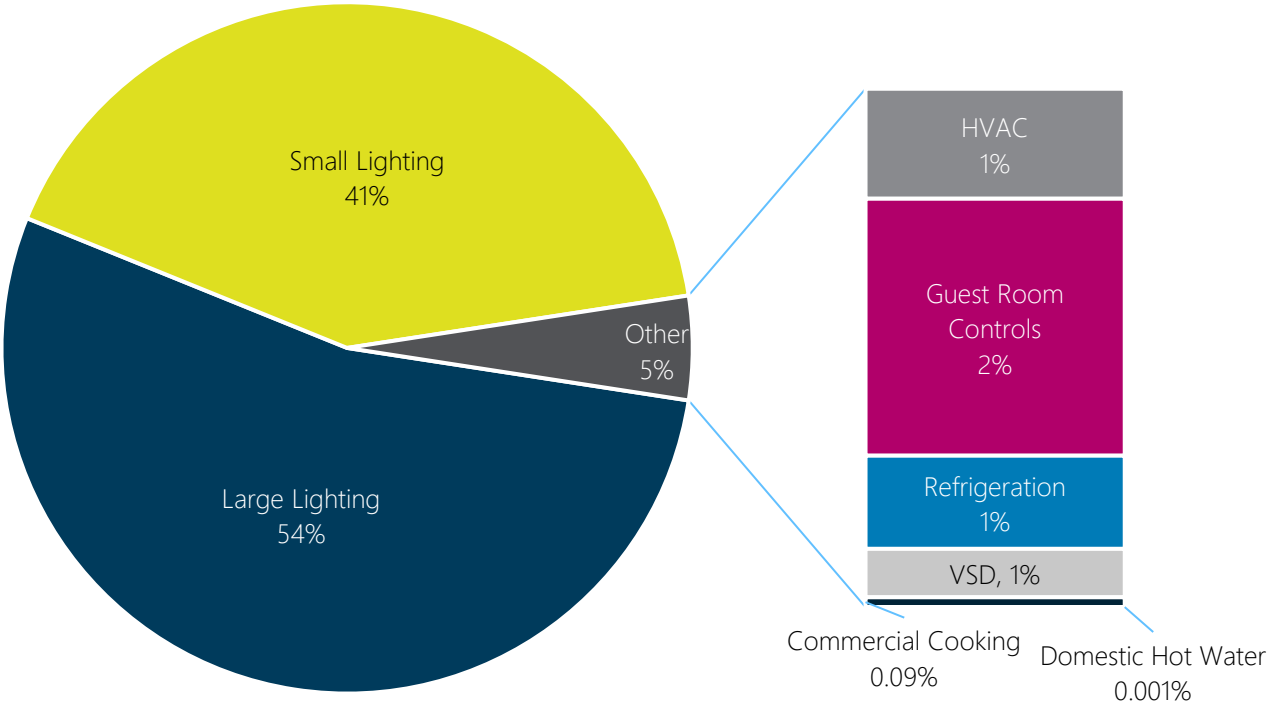
Table 2-5. 2023 Custom and Prescriptive Program Achievements – Winter Peak Demand

Component	Number of Projects[5]	Reported kW	Verified Gross Winter Peak kW	Verified Net Winter Peak kW
Prescriptive	1,369	n/a	18,215	14,663
Custom	165	n/a	5,834	3,815
TOTAL	**1,534**	**n/a**	**24,048**	**18,478**

Participation in the Prescriptive Program was dominated by lighting measures, comprising approximately 95% of total verified savings, as shown in Figure 2-1. The most significant non-lighting measure in 2023 was Guest Room Controls, which are occupancy-based control systems for hotel and motel rooms.

[5] Nine projects originally reported as 2023 projects but later determined to be incomplete have been removed from these reported values.

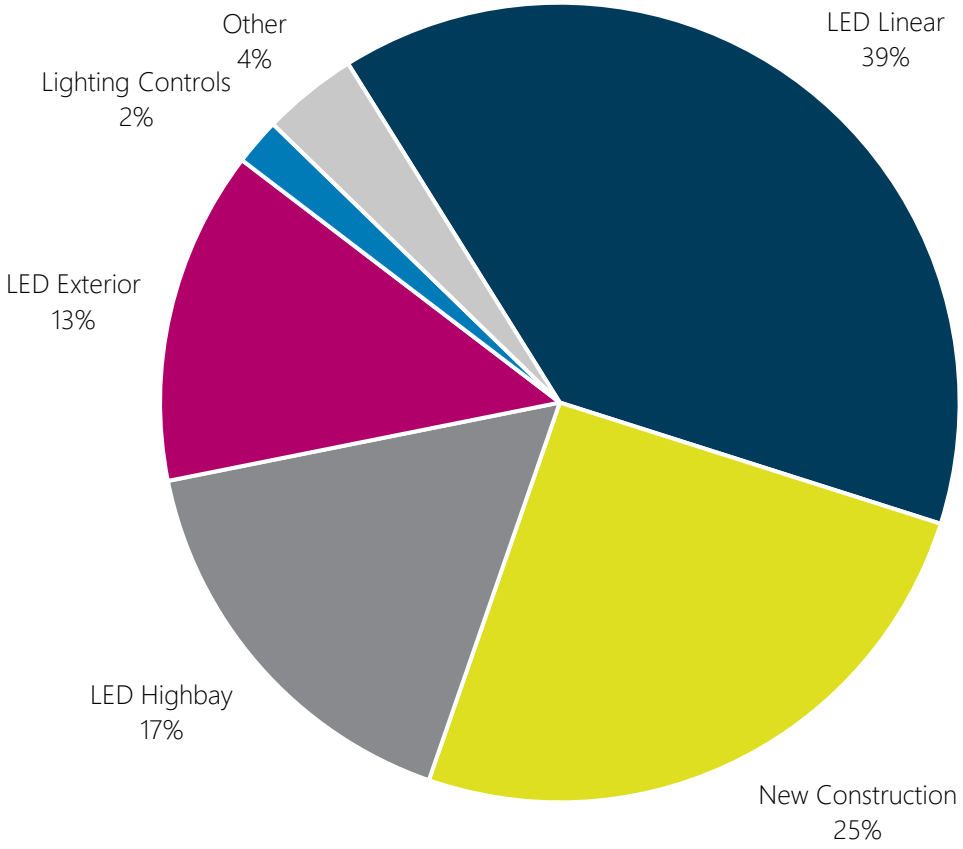
Figure 2-1. 2023 Prescriptive Program Verified Energy Savings Shares by Measure Type



Note: Small Lighting projects are defined as projects where the total reported energy savings sums to less than 100 MWh. Large Lighting projects are defined as projects where the total reported energy savings sums to 100 MWh or more.

Lighting energy savings were achieved through multiple types of lighting measures, as shown in Figure 2-2. LED Linear lighting was the largest single lighting type, but new construction, high bay, and exterior lighting types were also significant. Screw-in lighting, included in the "Other" designation, accounted for less than 1% of lighting savings in 2023. Measures affected by the Department of Energy's 45 lumens per watt backstop on general service lamps were discontinued on June 30, 2023.

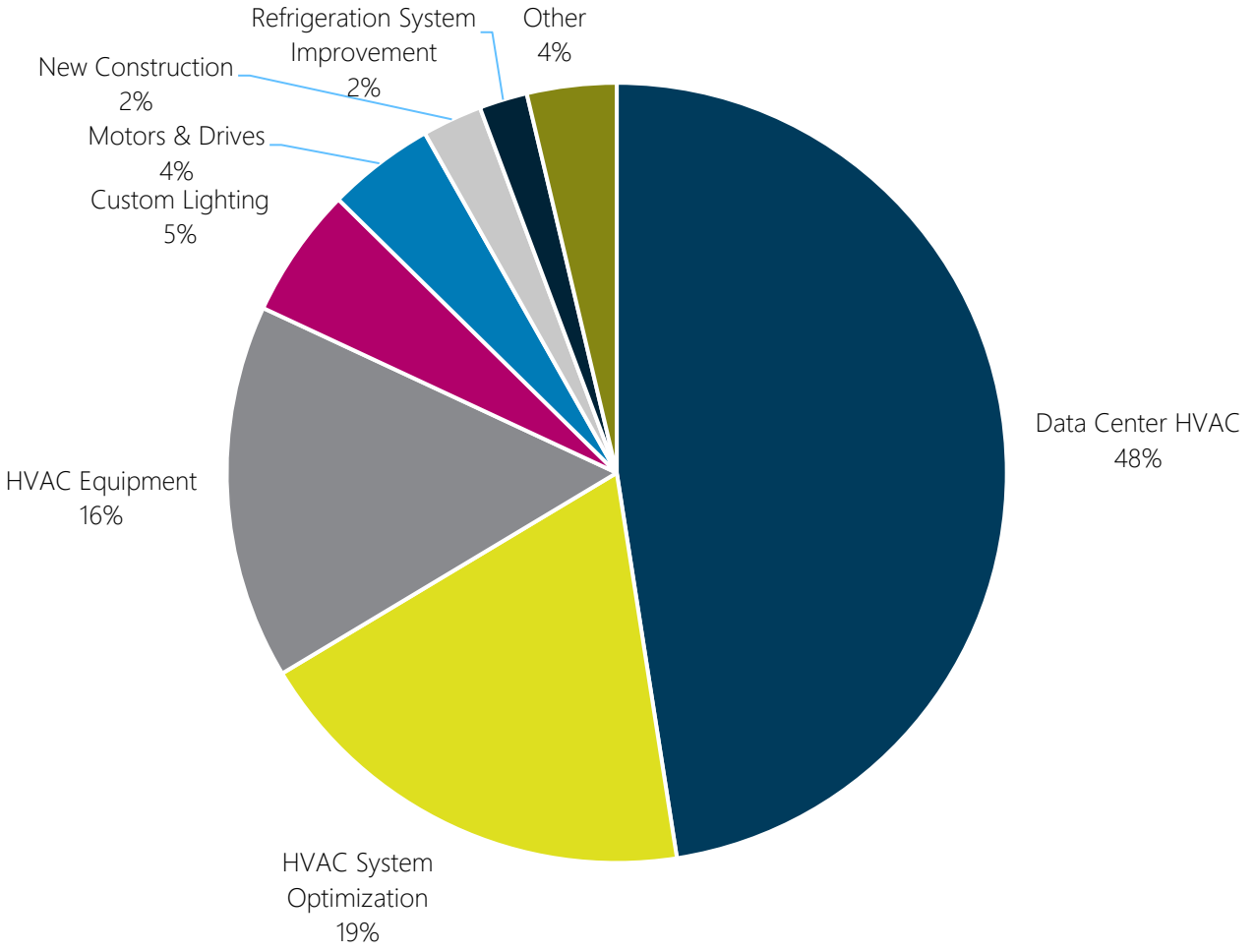
Figure 2-2. 2023 Prescriptive Lighting Verified Energy Savings Shares by Lighting Type



Note: Measure types for Legacy Lighting (approximately 8% of total lighting) were not available in tracking data and are not included in this figure.

Energy savings achieved through the Custom Program were achieved through a broad mix of project types. Figure 2-3 shows that Data Center HVAC, HVAC Equipment, and HVAC System Optimization projects together accounted for approximately 83% of verified energy savings.

Figure 2-3. 2023 Custom Program Verified Energy Savings Shares by Measure Type



2.3 Evaluation Methodology

The evaluation team deployed a strategic and data-driven evaluation approach of the Custom and Prescriptive programs with the objective to produce a rigorous and accurate assessment of the program and enable confidence in results. This, in turn, will help Georgia Power manage the programs by providing feedback based on sound engineering, statistical analysis, and market research findings. The evaluation approach used industry standard evaluation strategies to allow for feedback in changing market environments and to provide Georgia Power with the most accurate evaluation results possible.

The evaluation activities commenced in December 2022 with the development of the initial Evaluation Plan for the Custom and Prescriptive Programs. Shortly thereafter, the evaluation team conducted interviews with Georgia Power program staff and implementation staff (ICF and internal to Georgia Power) to help inform the remaining impact and process activities for the evaluation, including the review of program documentation and tools and the development of survey instruments. Process and impact evaluation activities were conducted in cohorts that were spaced out over the evaluation period, allowing the

evaluation team to conduct survey and verification activities closer to actual project implementation and to plan for verification activities that coincided with the heating and cooling seasons. Cohort 1 activities generally occurred from October to December of 2023, Cohort 2 occurred from January to April of 2024.

2.3.1 Research Questions

Table 2-6 presents the key researchable questions and the tools used to investigate each one. The evaluation approach combined a rigorous assessment of energy savings with in-depth exploration of participant motivations and challenges.

Table 2-6. Prescriptive and Custom Program Evaluation Research Questions

Key Research Questions	Staff and Implementation Team Dialogues	Participant and Nonparticipant Surveys	Contractor Surveys	Trade Group Interviews	Document Reviews	Project Engineering Review and On-site Verification
Are there planned program changes from the previous cycle?	X					
How effective is the enrollment and participant process? Does the process allow for timely receipt of incentives?	X	X	X			
How effective are the implementation contractors, including the contractors' customer outreach, contractor outreach and training, data tracking, quality control, and communication?	X		X	X		
How satisfied are customers and contractors with the program process and Georgia Power overall?		X	X	X		
How effective is program marketing? How aware are customers and contractors about the program?		X	X	X	X	
Are incentive levels sufficient to motivate energy efficiency implementation?		X	X			
What are the drivers and barriers for participation and customer demand for energy-efficient equipment?		X	X	X		
Does the program encourage adoption of additional energy efficiency measures? Are there additional measures that could be offered through the programs?	X	X	X	X		
What is the program team's plan for addressing the large savings goals?	X				X	
Does the program design and implementation meet the objective for a simple and straight-forward program and application process?	X	X	X			

Table 2-6. Prescriptive and Custom Program Evaluation Research Questions cont.

Key Research Questions	Staff and Implementation Team Dialogues	Participant and Nonparticipant Surveys	Contractor Surveys	Trade Group Interviews	Document Reviews Including Marketing Assessment	Project Engineering Review and On-site Verification
Are measure-level project incentive caps easy to understand?		X	X			
Does the program help increase customer acceptance and use of energy-efficient technologies and practices?		X	X			X
Does the program encourage and support comprehensive energy efficiency projects that go beyond single measures and common efficiency practices?		X	X			X
How effective is the program at obtaining verifiable, cost-effective, and long-term savings?	X	X			X	X
What is the program influence on the local market?		X	X	X	X	
What are the expected trends and future opportunities for evolution and growth for high impact measures?			X	X	X	
What are the accurate and supportable gross energy and demand impacts of the program?					X	X
What are the accurate and supportable net energy and demand impacts of the program, or the NTG impacts?		X	X			X
Does the measure installation vintage align with the measure baseline definition?					X	X
How do these programs support the business environment in Georgia, including support for companies with sustainability goals?		X				

2.3.2 Impact Evaluation Methodology

Impact evaluation is the process by which verified gross and net savings attributable to Georgia Power's programs in the evaluation period (January 1, 2023 through December 31, 2023) were determined. Gross impacts are the total energy and demand savings found at participating customers' premises. Net impacts are a reflection of the degree to which the gross savings are a result of the program efforts and influence. The impact evaluation process included the following activities:

- Review program tracking database.
- Select a sample of completed projects from each program.
- Independently determine verified gross energy and demand savings for each sampled project.
- Compare reported savings values to verified gross savings values to determine program RR.
- Estimate NTG ratios using participant attribution surveys.
- Calculate verified gross and net savings for each program.

Overarching impact evaluation strategies for the Prescriptive and Custom programs followed standard industry protocols and definitions, where applicable and practical, including the Department of Energy Uniform Methods Projects (DOE-UMP)[6] commercial lighting protocols.

Impact evaluation activities completed over the course of this evaluation are summarized in Table 2-7.

Table 2-7. Impact Evaluation Activity Summary

Impact Evaluation Activity	Custom	Prescriptive
Measure-level document reviews	16 Jumbo/Large projects	643 Lighting measures
	26 Small projects	69 Non-Lighting measures
Site Visits	16 Jumbo/Large projects	147 Lighting projects
	26 Small projects	41 Non-Lighting projects
NTG participant surveys	21	105

[6] U.S. Department of Energy's Uniform Methods Project is a framework and protocols for specific energy-efficient measures and programs. Online at: https://energy.gov/eere/about-us/ump-protocols

2.3.2.1 Sampling

Because of the Prescriptive and Custom programs' significant contribution relative to Georgia Power's portfolio, the evaluation team sampled to achieve 90% confidence with ±10% precision for each program separately. Sampling was conducted at the project level. Samples were selected on a rolling basis, in two separate cohorts, as described earlier. For the Prescriptive program, the evaluation team stratified the impact evaluation sample by measure type—lighting and non-lighting—to appropriately capture the inherent differences between these two project types. Samples sizes within the Prescriptive lighting stratum were further designated by building type to support the HOU study described in Section 0. For the Custom program, in response to the dominance of a few large projects towards the total program impact, the evaluation team stratified the impact evaluation sample by measure size. This stratification sought to ensure that the relative contributions of large and small measures were appropriately weighted in the final results.

2.3.2.2 Savings Verification

For projects in the evaluation sample, verified project savings were developed using project documentation reviews, on-site visits including data logging, virtual site visits, and engineering analysis.

Project documentation review focused on key project aspects including:

- Alignment with Georgia Power Energy Efficiency Technical Reference Manual (TRM) Version 3.0 (Georgia Power TRM 3.0) and other regional TRMs for reasonableness comparison.
- Consistency within the tracking database.
- Measure description and project characterization.
- Savings calculation algorithms, including lighting HOU and documentation of assumptions.
- Alignment between project documentation and parameter assumptions including invoiced quantities and equipment specifications.

In-person and virtual site visits were conducted to verify installed equipment quantities and real-world operating parameters in comparison to project documentation. All site visits included confirmation of equipment quantities and model numbers and interviews with site contacts to understand year-round operating conditions. Operating parameters were assessed through site contact interviews and on-site data collection. Virtual site visits were employed for measures and projects, primarily non-lighting and custom projects, that were feasible to discuss via video conference call. Lighting HOU were independently measured whenever possible using standalone on/off data loggers.

2.3.2.3 Net-to-Gross Methodology

The evaluation team employed self-report end-user participant surveys and traditional NTG methodology to estimate NTG ratios. Free-riders are defined as participants who would have purchased and installed measures without the support of the program; participant spillover indicates additional unrebated measures

that customers have installed because of program influence. The equation to calculate NTG savings is as follows:

NTG = 100% – Free-Ridership + Participant Spillover

NTG ratios were used to develop the verified net savings estimates following guidelines in the State and Local Energy Efficiency Action Network's *Program Energy Efficiency Program Impact Evaluation Guide* [7] and the U.S. DOE-UMP information on net savings.[8]

The evaluation team designed the end-user participant survey using questions and methods similar to the process employed in the three previous Georgia Power program evaluations (2021, 2018 and 2015). The concept underlying the self-report surveys is that Georgia Power downstream program commercial customers decide whether or not to participate in DSM programs; therefore, they are in the best position to explain what influenced their decision. The survey was designed to collect information on free-ridership and participant spillover, as further detailed below.

Free-Ridership. To mitigate self-report bias, a battery of free-ridership questions was used to collect data on each participant's *intention*, as well as the program factors that might have had *influence* on the participant's actions. The *intention* and *influence* scores both held a maximum free-ridership value of 50%. The overall free-ridership score for each participant was calculated by summing the *intention* and *influence* scores:

Overall Free-Ridership Score = *Intention* Free-Rider Score (Maximum 50%) + *Influence* Free-Rider Score (Maximum 50%)

Participant Spillover. The survey also included questions necessary to calculate participant spillover—the program's influence on customers' decisions to invest in additional energy efficiency measures for which they did not receive any Georgia Power incentives and for which we can provide reasonable documentation of savings.

The NTG methodology is described in greater detail in Appendix C.

[7] State and Local Energy Efficiency Action Network. *Energy Efficiency Program Impact Evaluation Guide*. December 2012. Online at: https://www.energy.gov/scep/slsc/state-and-local-energy-efficiency-action-network-see-action

[8] U.S. Department of Energy's Uniform Methods Project is preparing a framework and protocols for specific energy efficiency measures and programs. Online at: https://energy.gov/eere/about-us/ump-protocols

2.3.3 Process Evaluation Methodology

To gather insights into Georgia Power's Custom and Prescriptive program, the evaluation team developed and deployed interviews and surveys with program staff, program implementers, trade groups, participating and nonparticipating customers and participating and nonparticipating contractors. Table 2-8 presents the number of interviews and surveys conducted for each activity. The survey mode included email and phone for most activities, with most surveys being conducted via phone. Section 2.5 outlines the findings from the process evaluation activities.

Table 2-8. Process Evaluation Activity Summary

Process Evaluation Activity	Survey Mode	Custom	Prescriptive
Staff/implementer interviews	Phone	4	
Trade group and Distributor interviews	Phone	9	
Participating customer surveys	Mixed Phone and Email	21	105
Nonparticipant surveys	Mixed Phone and Email	300	
Participating contractor surveys	Mixed Phone and Email	2	17
Nonparticipating contractor surveys	Phone	27	

2.4 Impact Evaluation Findings

2.4.1 Realization Rates

The evaluation team selected a sample of completed Prescriptive projects comprising 12% of the program's total reported savings. Data collected through M&V activities, including desk reviews, virtual, and in-person site visits, was used to assess reported savings for these projects. Impact evaluation activities were conducted on a continual basis throughout the evaluation period, with on-going collaboration between the evaluation team and the implementation team.

2.4.1.1 Prescriptive Program Realization Rates

The evaluation team reviewed the energy and demand savings estimates for the evaluation sample, which included a total of 712 measures. Inputs, assumptions, and algorithms used in the reported savings estimates were compared against findings from project documentation review and independent data collection activities. In cases where a discrepancy was found between the original savings estimate and evaluation-collected data, the evaluation team made corrections and recalculated energy and demand savings. Examples of corrections made for specific projects in the evaluation sample include adjustments to lighting

fixture quantities based on observations made during in-person site visits and updates to equipment efficiency based on review of manufacturer specification sheets. These verified savings values were used to determine the stratum-level RR shown in Table 2-9 for energy and Table 2-10 for demand. Lighting projects were divided into strata based on project size in order to more accurately weight the results from each group.

The RR for energy exceeded 100% while the RR for demand reached 97.7%, indicating that the program reported savings are accurate. Key contributing factors driving the RR varied by strata and are described in subsequent paragraphs.

For energy RR, the achieved statistical precision at 90% confidence interval (CI) was ±10% precision, meeting the targeted value of ±10% precision. For summer demand RR, the larger relative precision of ±14% for the program results from more observed variation in verified summer peak demand savings values as compared to reported values. For the evaluation, the summer peak window was defined as a one-hour period, 4pm to 5pm, on July weekdays. Implementation lighting calculators apply generalized CFs based on space type. The demand RR of 97.7% indicates that on average, the generalized CFs in use are a good overall representation of average coincidence.

Table 2-9. 2023 Prescriptive Program Realization Rates - Energy

Component	Stratum	Sampled Measures	Reported Measures	Energy Realization Rate	Relative Precision at 90% CI
Lighting	Large (≥ 100 MWh)	226	1,552	107.2%	16%
	Small (< 100 MWh)	417	6,308	137.1%	12%
	Sub-Total	643	7,860	118.4%	11%
Non-Lighting	HVAC	33	255	98.0%	30%
	Guest Room Controls	22	203	105.5%	3%
	VSD	6	26	35.8%	79%
	Other	8	108	57.3%	16%
	Sub-Total	69	592	76.2%	9%
PRESCRIPTIVE TOTAL		**712**	**8,452**	**115.2%**	**10%**

Table 2-10. 2023 Prescriptive Program Realization Rates –Summer Demand

Component	Stratum	Sampled Measures	Reported Measures	Demand Realization Rate	Relative Precision at 90% CI
Lighting	Large (≥ 100 MWh)	226	1,552	94.4%	26%
	Small (< 100 MWh)	417	6,308	105.0%	10%
	Sub-Total	643	7,860	98.6%	16%
Non-Lighting	HVAC	33	255	81.4%	59%
	Guest Room Controls	22	203	150.7%	17%
	VSD	6	26	46.8%	81%
	Other	8	108	46.7%	100%
	Sub-Total	69	592	100.8%	18%
PRESCRIPTIVE TOTAL		**712**	**8,452**	**97.7%**	**14%**

For the Small and Large Lighting strata, the evaluation showed that the implementation team is applying algorithms that are reasonably accurate and appropriate. Evaluation results show that assumptions for factors like lighting wattage, HVAC IFs, and summer peak CFs are appropriate for the participant population. For lighting project baselines, savings calculations include appropriate baseline corrections for outdated equipment types. Existing T12 fluorescent lamps are corrected to T8-equivalent baseline wattages, and similarly incandescent bulbs are corrected to a halogen-equivalent baseline[9].

The most critical factor in lighting strata RR is the HOU. Reported savings for lighting projects in the Prescriptive program are often deemed from a pre-defined list of business and space types. A "24/7"schedule option is available but was not frequently used in 2023 projects.

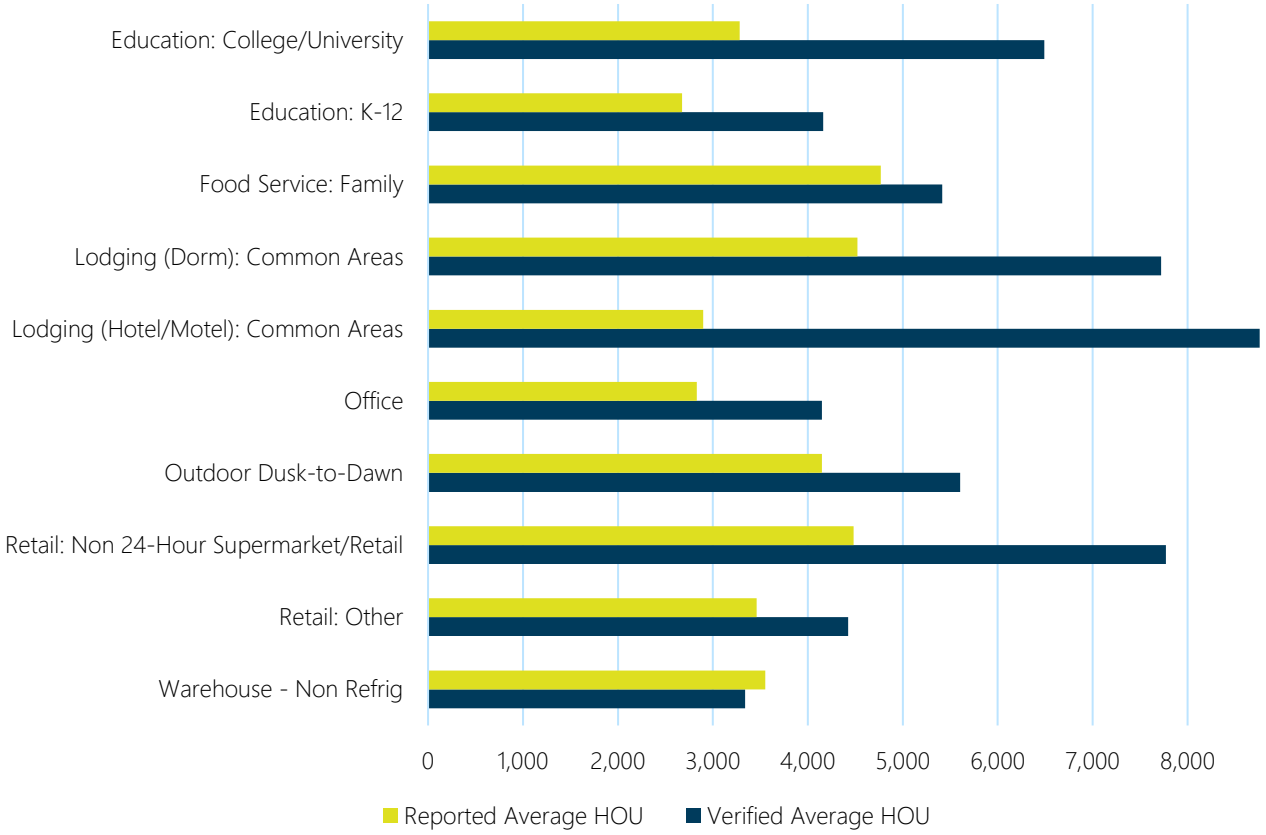
In the sample of evaluated lighting projects, the evaluation team found HOU assumptions to be conservative relative to evaluated, site-specific hours, particularly for smaller lighting projects, as evidenced by a RR of 137%. Examples of site-specific findings where reported HOU were conservative include:

- Facilities where a portion of lights are in use 24/7, such as lodging common areas and universities, but reported hours were lower.
- Exterior lighting projects where the facility type's HOU were applied instead of exterior-specific values, such as an office space that retrofitted exterior lighting, but used office specific HOU.

[9] The evaluation found that the Prescriptive program's current practices are making these types of updates as part of the reported savings calculation. For example, savings for T12 lighting that is upgraded to LED through the program is estimated using an equivalent T8 baseline. Similarly, prior to their exclusion from the program starting June 30, 2023, incandescent screw-in lamps were updated to halogen-equivalent wattages by default in the savings calculation.

Figure 2-4 shows the average reported versus verified HOU for key space types in the 2023 participant population. The results are most extreme for Lodging Common Areas, where the program is using 2,987 hours on average, whereas evaluated projects in these areas were found to be year-round.

Figure 2-4. 2023 Reported Versus Verified Hours of Use for Key Space Types



For the two largest non-lighting strata – HVAC and Guest Room Controls - the evaluation team found the algorithms and savings values in use to be very accurate. RR were lower for variable speed drives (VSDs), indicating that the program assumptions for this measure are aggressive. From the measures included in the Other strata, one key driver was the prevalence of schools participating in kitchen equipment measures, which are utilized less frequently than similar equipment in restaurants.

2.4.1.2 Custom Program Realization Rates

The evaluation team selected a sample of completed Custom projects comprising 65% of the program's total reported savings. As in the Prescriptive program, data collected through M&V activities, including desk reviews, virtual, and in-person site visits, was used to assess reported savings for these projects. Impact evaluation activities were conducted on a continual basis throughout the evaluation period, with on-going collaboration between the evaluation team and the implementation team. In cases where a discrepancy was

found in the reported savings, the evaluation team made corrections and recalculated energy and demand savings. These verified savings values were used to determine the stratum-level RR shown in Table 2-11 for energy and Table 2-12 for demand.

Table 2-11. 2023 Custom Program Realization Rates - Energy

Component	Stratum	Sampled Measures	Reported Measures	Reported kWh	Energy Realization Rate	Relative Precision at 90% CI
Custom	Jumbo (≥ 1,000 MWh)	3	4	22,696,216	118.4%	10%
	Large (100 to 1,000 MWh)	13	49	15,827,927	97.1%	4%
	Small (< 100 MWh)	26	117	3,700,883	108.8%	9%
CUSTOM TOTAL		**42**	**170**	**42,225,026**	**109.6%**	**4%**

Table 2-12. 2023 Custom Program Realization Rates – Summer Peak Demand

Component	Stratum	Sampled Measures	Reported Measures	Reported kW	Demand Realization Rate	Relative Precision at 90% CI
Custom	Jumbo (≥ 1,000 MWh)	3	4	1,785	124.6%	41%
	Large (100 to 1,000 MWh)	13	49	2,377	116.3%	13%
	Small (< 100 MWh)	26	117	548	66.3%	19%
CUSTOM TOTAL		**42**	**170**	**4,711**	**119.3%**	**8%**

Energy RR for all strata nearly met or exceeded 100%. Demand RR were less than 100% for the small stratum. Key contributors to these results are:

- Appropriate Engineering Analysis. Generally, across the evaluated sample, the implementation team was found to be employing appropriate level of rigor in savings estimates. Energy savings estimates for smaller projects are generally developed using engineering or quasi-prescriptive algorithms, whereas larger project estimates employ more complex modelling.
- Conservative Treatment of Jumbo Projects. The evaluation team found some conservative assumptions in use for projects in the jumbo strata. After reviewing the calculation and adjusting for finds from the documentation review and site visits, the evaluation team adjusted the calculation to reflect as-built conditions where appropriate.

2.4.1.3 Winter Peak Analysis

The Custom and Prescriptive programs are currently estimating and tracking summer peak demand savings values for all projects. Winter demand is not estimated by the program at this time. The evaluation team independently developed winter peak estimates for all projects in the evaluation sample. The winter peak period was defined as 8AM-9AM on January weekdays.

To estimate the verified gross winter peak savings for the program, the evaluation team developed demand-to-energy ratios for the sample and applied to gross verified energy savings for each stratum. Table 2-13 shows the total winter peak demand savings calculation for the evaluated sample.

Table 2-13. 2023 Verified Gross Winter Peak Demand Savings

Component	Stratum	Verified Gross kWh	Demand-to-Energy Ratio	Verified Gross Winter Peak kW
Lighting	Large (≥ 100 MWh)	63,542,380	0.00011728	4,630
	Small (< 100 MWh)	49,038,009	0.00019171	9,806
	Sub-Total	112,580,390		14,436
Non-Lighting	HVAC	1,219,257	0.00006497	64
	Guest Room Controls	2,848,863	0.00000000	0
	VSD	536,825	0.00000000	0
	Other	1,381,535	0.00014660	163
	Sub-Total	5,986,481		227
PRESCRIPTIVE TOTAL		**118,566,871**		**14,663**
Custom	Jumbo (≥ 1,000 MWh)	26,879,170	0.00001203	32
	Large (100 to 1,000 MWh)	15,367,425	0.00013128	1,319
	Small (< 100 MWh)	4,026,763	0.00014017	2,464
CUSTOM TOTAL		**46,273,359**		**3,815**

2.4.2 Net-to-Gross Ratio

The evaluation team assessed free-ridership and participant spillover by interviewing 105 Prescriptive program participants and 21 Custom program participants using the self-report methodology discussed in Section 2.3.2.3 and described in greater detail in Appendix C. Table 2-14 summarizes the free-ridership, spillover and NTG results. Two very large Custom program participants (labeled as Jumbo) represent 46% of the Custom's verified gross program population savings. The evaluation team is reporting these jumbo Custom project's NTG results and savings separately from the other 19 Custom respondents. The NTG results from the 19 Custom respondents are being applied to the 54% of Custom verified gross program population savings that are not associated with the jumbo projects.

Table 2-14. 2023 Custom and Prescriptive Program NTG Results

Program	Responses	Estimated Free-ridership	Estimated Participant Spillover	NTG Ratio
PRESCRIPTIVE TOTAL	**105**	**19.6%[1]**	**0.1%**	**80.5%**
Custom - Large and Small	19	22.0%[1]	0.0%	78.0%
Custom - Jumbo	2	42.3%	0.0%	57.7%
CUSTOM TOTAL	**21**	**34.7%[2]**	**0.0%[2]**	**65.4%**
CEEP TOTAL	**126**	**23.8%[3]**	**0.1%[3]**	**76.3%**

[1] The evaluation team weighted the estimate by respondents' verified program kWh savings to arrive at the estimates for the total program.
[2] The evaluation team weighted the Custom program stratum estimates by their population verified gross program kWh savings to arrive at the estimates for the Custom program total.
[3] The evaluation team weighted the specific Prescriptive program total and Custom program total estimates by their population verified gross program kWh savings to arrive at the estimates for the Program total.

2.4.2.1 Free-Ridership

The team calculated the final free-ridership value for the programs as the sum of the verified gross savings weighted intention (with a maximum score 50%) and verified gross savings weighted influence (with a maximum score 50%) free-ridership components, which resulted in a value between 0% and 100%, as shown in the following equation:

Final Free-Ridership Value = **Intention Score** + **Influence Score**

The influence and intention scores contribute equally to the final free-ridership score. The higher the final free-ridership value, the greater the deduction of savings from the gross savings estimates.

Table 2-15 presents the free-ridership results for the programs. These findings are described in greater detail in Appendix C.1.

Table 2-15. 2023 Custom and Prescriptive Program Free-Ridership Estimates

Program	Responses	Intention Score	Influence Score	Estimated Free-Ridership (Intention Score + Influence Score)
PRESCRIPTIVE TOTAL	**105**	**14.9%[1]**	**4.7%[1]**	**19.6%**
Custom - Large and Small	19	17.5%[1]	4.5%[1]	22.0%
Custom - Jumbo	2	26.9%	15.4%	42.3%
CUSTOM TOTAL	**21**	**23.4%[2]**	**11.3%**	**34.7%**
CEEP TOTAL	**126**	**17.2%[3]**	**6.5%[3]**	**23.8%**

[1] The evaluation team weighted the estimate by respondents verified gross program kWh savings to arrive at the estimates for the total program.
[2] The evaluation team weighted the Custom program stratum estimates by their population verified gross program kWh savings to arrive at the estimates for the Custom program total.
[3] The evaluation team weighted the specific Prescriptive program total and Custom program total estimates by their population verified gross program kWh savings to arrive at the estimates for the CEEP total.

2.4.2.2 Spillover

Five Prescriptive program participants and no Custom program participant[10] reported that after participating in the program they installed additional high-efficiency measures for which they did not receive an incentive and Georgia Power was important in their decision to install these measures. The gross energy savings estimated for the spillover measures are aligned with this evaluation and the Georgia Power TRM 3.0. Table 2-16 shows the steps the evaluation team used participant spillover estimates of 0.1% and 0.0% to determine the Prescriptive and Custom program, respectively.

[10] The Prescriptive program participants reported measures were LED lighting, and high-efficiency air conditioning equipment.

Table 2-16. 2023 Participant Spillover Estimates

Variable	Variable Description	Prescriptive Value	Custom Value	Source
A	Survey Sample Size (n)	105	20	Survey Data
B	Total Survey Sample Spillover kWh Savings	25,220	0.0	Survey Data / Engineering Estimates
C	Average Spillover kWh Savings Per Survey Respondent	240	0	Variable B ÷ Variable A
D	Program Participant Population	437	56	Program Tracking Data
E	Spillover kWh Savings Extrapolated to the Participant Population	104,965.5	0.0	Variable C × Variable D
F	Evaluated Program Population kWh Savings	112,618,651	16,020,055	Evaluated Gross Impact Analysis
G	Spillover Percent Estimate	0.1%	0.0%	Variable E ÷ Variable F

2.4.2.3 Results Benchmarking

To provide context for and a check against the results of the surveyed participants, the evaluation team researched Prescriptive program evaluation reports for which a NTG analysis was conducted. Table 2-17 summarizes the most comparable data found by the evaluation team for the Prescriptive program which finds 2023 NTG results in the range of peer utilities.

Table 2-17. Prescriptive Program NTG Benchmarking

Utility	Evaluation Year	Free-ridership	Spillover	NTG	Notes
Georgia Power	2023	19.6%	0.1%	80.5%	Self-report with participants
Georgia Power	2021	30.0%	1.0%	71.0%	Self-report with participants
ComEd IL	2023	22.0%	21.0%	99.0%	Self-report with participants
Ameren IL	2023	17.4%	7.6%	90.2%	Self-report with participants
New Jersey Electric Utilities (Lighting)	2023			58.0% - 64.0%	Meta-Analysis
New Jersey Electric Utilities (Non-Lighting)	2023			84%	Meta-Analysis
Massachusetts Electric Utilities (Lighting)	2021			74.6%	Meta-Analysis
PPL (PA)	2023			65.0%	Self-report with participants
First Energy (PA)	2023			59.0% – 66.0%	Self-report with participants
PECO (PA)	2023			77.0%	Self-report with participants

Table 2-18 summarizes the most comparable data found by the evaluation team for the Custom program which finds 2023 NTG results in the range of peer utilities.

Table 2-18. Custom Program NTG Benchmarking

Utility	Evaluation Year	Free-ridership	Spillover	NTG	Notes
Georgia Power	2023	34.7%	0.0%	65.4%	Self-report with participants
Georgia Power	2021	12.5%	0.1%	87.6%	Self-report with participants
ComEd IL	2023			56.0%	Self-report with participants
Ameren IL	2023			78.6%	Self-report with participants
New Jersey Electric Utilities	2023			77.0%	Meta-Analysis
Massachusetts Electric Utilities	2021			64.2%	Meta-Analysis
PPL (PA)	2023			74.0%	Self-report with participants
First Energy (PA)	2023			49.0% – 57.0%	Self-report with participants
PECO (PA)	2023			77.0%	Self-report with participants

2.4.3 Verified Energy and Demand Savings

Realization rates are applied to the adjusted reported gross savings to determine verified gross savings. The NTG ratio is applied to the verified gross savings to determine the verified net savings. Table 2-19 through Table 2-21 summarize the application of the NTG ratio to the verified gross energy, summer peak demand, and winter peak demand savings, respectively, for the Prescriptive and Custom programs.

Table 2-19. 2023 Verified Savings Results - Energy

Program	Component	Realization Rate	Verified Gross kWh	NTG	Verified Net kWh
Prescriptive	Lighting	118.4%	112,580,390	80.5%	90,627,214
	Non-Lighting	76.2%	5,986,481		4,819,117
PRESCRIPTIVE TOTAL		**115.2%**	**118,556,871**	**80.5%**	**95,446,331**
Custom	Jumbo (≥ 1,000 MWh)	118.4%	26,879,170	65.4%	17,578,977
	Large (100 to 1,000 MWh)	97.1%	15,367,425		10,050,296
	Small (< 100 MWh)	108.8%	4,026,763		2,633,503
CUSTOM TOTAL		**109.6%**	**46,273,359**	**65.4%**	**30,262,776**

Table 2-20. 2023 Verified Savings Results – Summer Demand

Program	Component	Realization Rate	Verified Gross Summer Peak kW	NTG	Verified Net Summer Peak kW
Prescriptive	Lighting	98.6%	14,513	80.5%	11,683
	Non-Lighting	100.8%	1,737		1,398
PRESCRIPTIVE TOTAL		**97.7%**	**16,066**	**80.5%**	**12,933**
Custom	Jumbo (≥ 1,000 MWh)	124.6%	2,225	65.4%	1,455
	Large (100 to 1,000 MWh)	116.3%	2,765		1,808
	Small (< 100 MWh)	66.3%	363		238
CUSTOM TOTAL		**119.3%**	**5,620**	**65.4%**	**3,676**

Table 2-21: 2023 Verified Savings Results – Winter Demand

Program	Component	Verified Gross Winter Peak kW	NTG	Verified Net Winter Peak kW
Prescriptive	Lighting	17,933	80.5%	14,436
	Non-Lighting	282		227
PRESCRIPTIVE TOTAL		**18,215**	**80.5%**	**14,663**
Custom	Jumbo (≥ 1,000 MWh)	48	65.4%	32
	Large (100 to 1,000 MWh)	2,017		1,319
	Small (< 100 MWh)	3,768		2,464
CUSTOM TOTAL		**5,834**	**65.4%**	**3,815**

2.5 Process Evaluation Findings

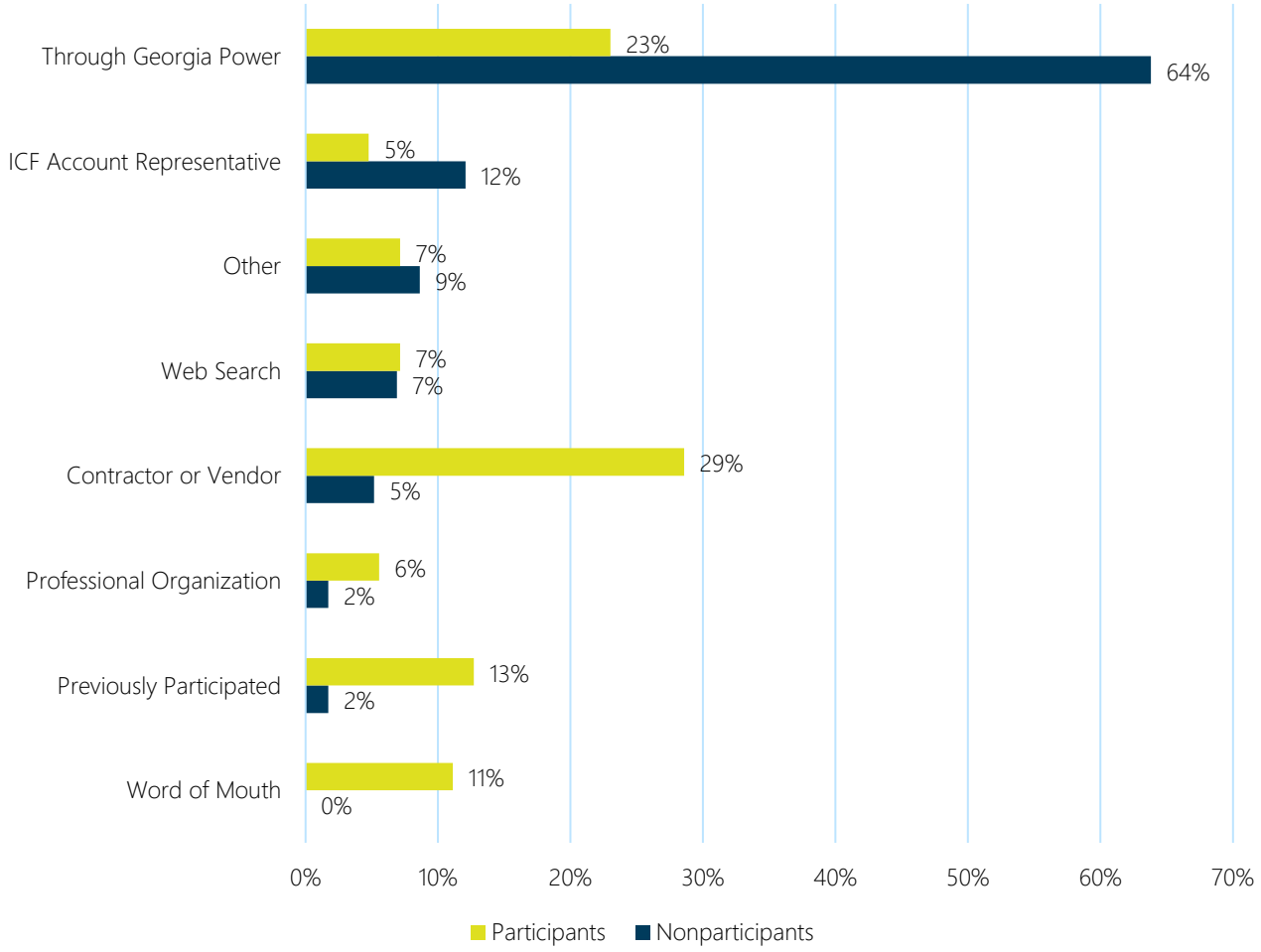
The following section outlines the findings from the process evaluation activities. In most instances, the survey findings from the Custom participants and Prescriptive participants are combined due to similarities in the findings, unless where otherwise noted.

2.5.1 Program Awareness and Communication

Georgia Power conducted marketing campaigns throughout the year that sought to increase awareness of the program and to drive adoption. Participants and nonparticipants both noted that their primary awareness of the program was through Georgia Power (Figure 2-5). Those respondents who noted that their primary awareness was through Georgia Power were asked for further details on their awareness source through Georgia Power, wherein 75% of participants and 46% of nonparticipants were made aware via a Georgia Power email. Only a small percentage (19%) of nonparticipants were aware of any energy

efficiency program offering provided by Georgia Power prior to the survey. Notably, 57% of participants responding to the survey stated that they have participated in Georgia Power's CEE Program in prior years.

Figure 2-5. Customer Program Awareness



Source: Custom/Prescriptive Participant Survey and Nonparticipant Survey. Questions Q1/Q2. "How did you learn about Georgia Power's Commercial Energy Efficiency Program?" Participants n=126 Nonparticipants n=58

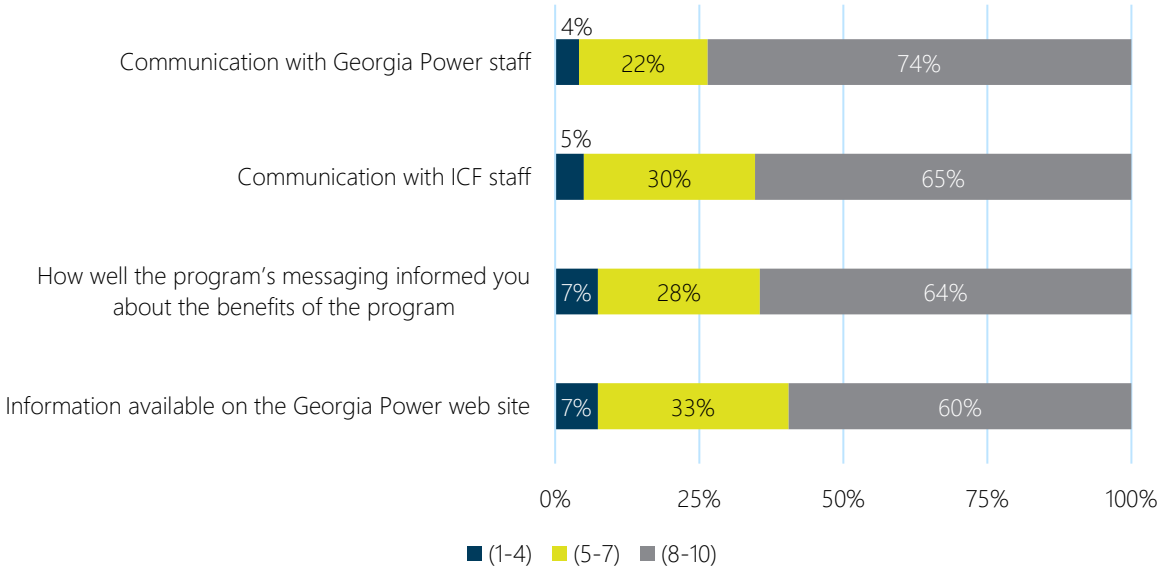
When respondents were asked their preferred source of program awareness, the majority of participants (65%) and nonparticipants (67%) noted an email from Georgia Power as the preferred method. Participants also mentioned direct contact from a Georgia Power account representative (33%) and an ICF account representative (26%) as other methods. The trend for preferred program communication via email is similar to the prior evaluation cycle. Participants who received messaging from Georgia Power around energy efficiency benefits said it was very easy to understand or somewhat easy to understand.

The most common way participating contractors learned about the program was through a Georgia Power representative or account manager (26%), followed by an ICF representative and word of mouth (21% each).

The majority of these respondents (74%) stated that they learn about program changes mainly through email from Georgia Power or ICF. The majority of nonparticipating contractors surveyed were aware of Georgia Power's Commercial Energy Efficiency programs (85%), and of those who were aware, the source of awareness included email and direct contact from Georgia Power or an account representative. Of the nonparticipating contractors that were registered Trade Allies in 2021 or 2022, the responses for why they have not become a registered Trade Ally in 2023 was because they thought they were still registered (29%), they have not worked on any qualifying projects in 2023 (24%), and that customers are not interested in the rebate levels (18%). As Georgia Power continues to inform contractors about the program and any program changes, it will be important to keep in mind that, similar to customers, contractors preferred mode of communication is through email (noted by 89% of participating contractors and 89% of nonparticipating contractors).

Participants expressed high levels of satisfaction with various aspects of the program communication, with 65% of respondents rating their communication with ICF an 8, 9, or 10 on a 10-point scale of satisfaction and 74% of respondents rating their communication with Georgia Power an 8, 9 or 10 on a 10-point scale of satisfaction (Figure 2-6). Statements regarding lack of satisfaction with these areas focused on a slow response time to questions.

Figure 2-6. Participant Satisfaction with Program Communication



Source: Custom/Prescriptive Participant Survey. Questions Q19. "Please rate your level of satisfaction with different aspects of Georgia Power's Commercial Energy Efficiency Program using a 1 to 10 scale where 1 is "extremely dissatisfied" and 10 is "extremely satisfied" n=121

Contractors were also asked about the communication processes and informational material received from Georgia Power. Seventy four percent (74%) of participating contractors had received some type of program materials and of these, 71% found the information 'very useful'. Forty one percent (41%) of nonparticipating contractors had received some type of program materials and of these, 18% found the information 'very useful'. Very few participating contractors provided feedback on additional materials that they would like to receive from Georgia Power, but general comments around 'more information in general' was noted by a handful of contractors.

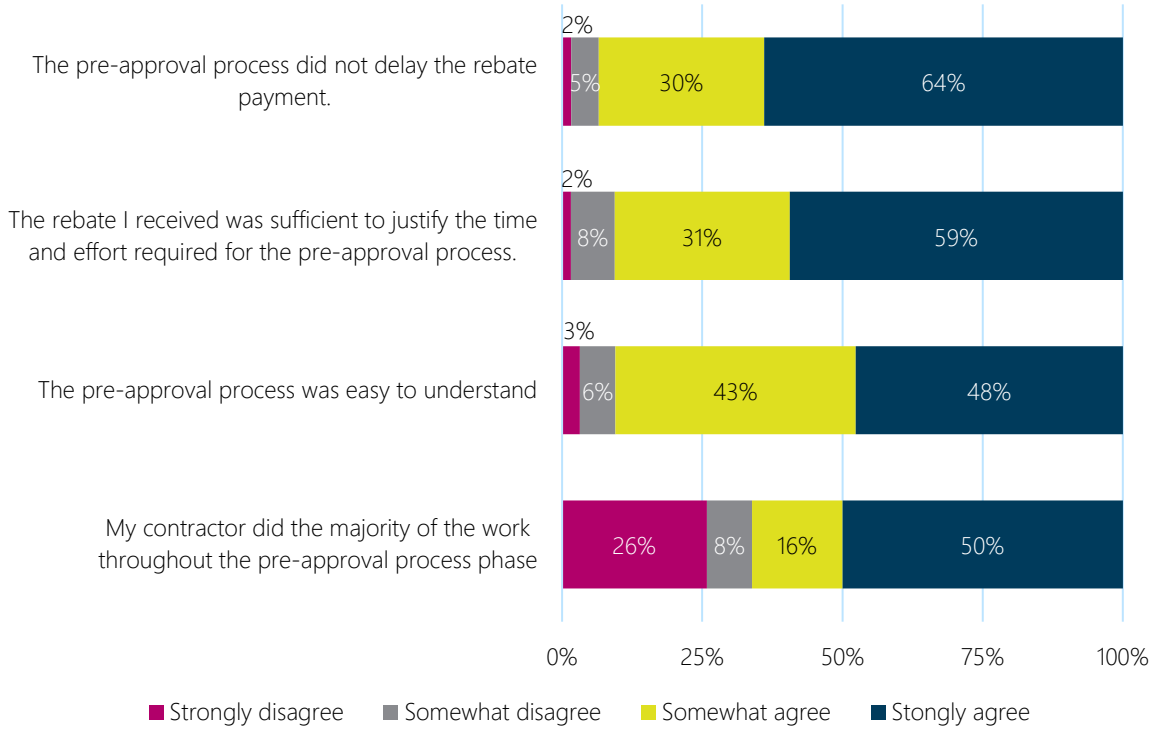
"I would like to know more about the measure changes, such as the program year end dates. Knowing the application submission deadline is very important to me".

-Participating Contractor

2.5.2 Program Design and Application Process

One of Georgia Power's objectives for the CEEP is that the program and application process is simple and straight-forward. As such, participants were asked about their experiences with the pre-approval and application process. Participants were reminded that the pre-approval process was optional and was not a requirement to participate. About 61% of Prescriptive participants and 76% of Custom participants were aware of the pre-approval process. Of those aware, 66% of respondents stated the contractor did most of the work and the majority (94%) 'somewhat or strongly' agree that the pre-approval process did not delay payment (Figure 2-7).

*Figure 2-7. Participant Pre-Approval Process Agreement Questions**

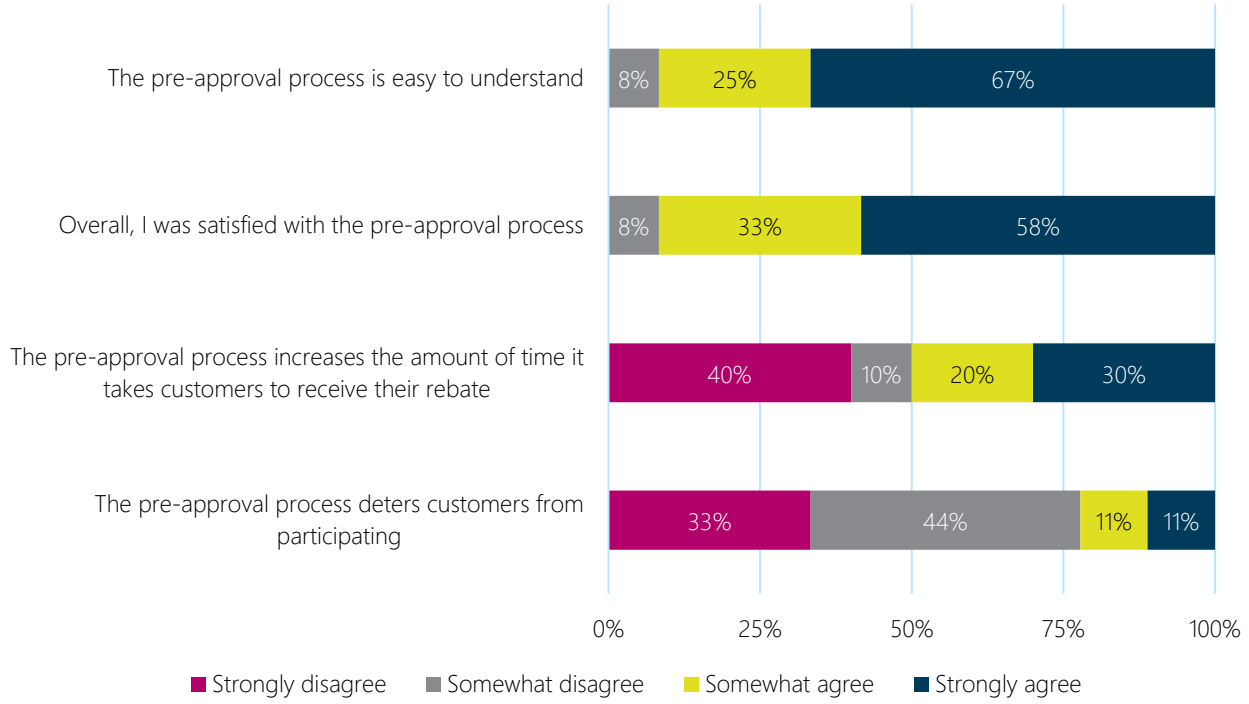


*Totals may not sum to 100% due to rounding

Source: Custom/Prescriptive Participant Survey. Questions Q12. "Thinking about the pre-approval process, for each of the next statements please indicate if you strongly agree, somewhat agree, somewhat disagree, or strong disagree?" n=61, 64, 63, and 62 respectively from the top

Overall satisfaction among contractors with the pre-approval process was high with 92% of contractors satisfied with the process overall (Figure 2-8). Of note, 22% of contractors did 'somewhat or strongly' agree with the statement that the pre-approval process deters customers from participating, and half of responding contractors 'somewhat or strongly' agree the pre-approval process increases the amount of time it takes customers to receive their rebate.

Figure 2-8. Contractor Statements Regarding Pre-Approval Process

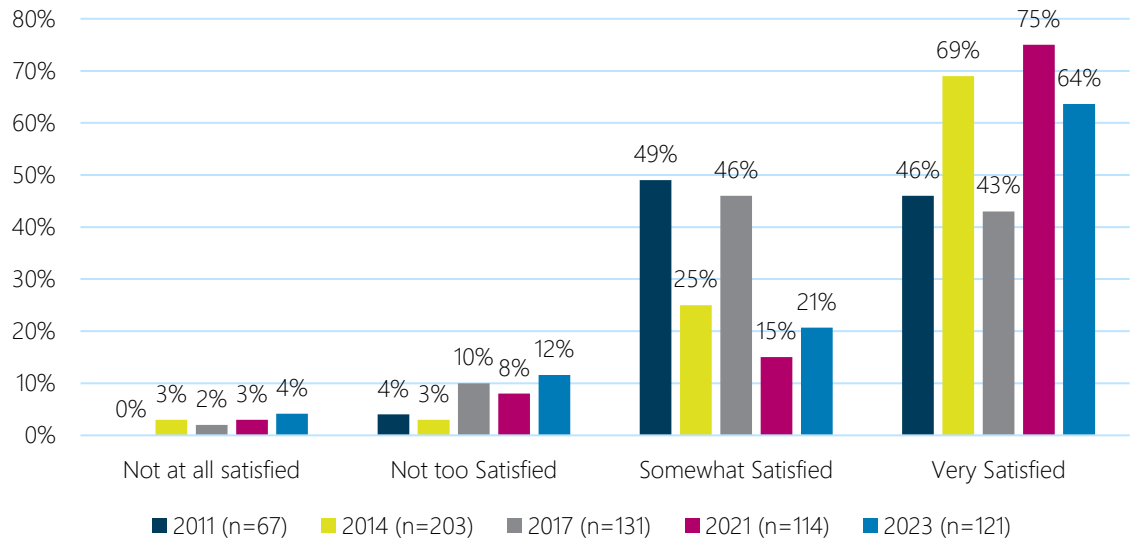


Source: Custom/Prescriptive Participating Contractor Survey. Questions Q15. "Thinking about the pre-approval process, for each of the next statements please indicate if you strongly agree, somewhat agree, somewhat disagree, or strong disagree?" n=12, 12, 10, and 9 respectively from the top

The majority (90%) of Custom participants understood the rebate cap for the program. Satisfaction with the application process amongst participants remains strong in comparison to the last several evaluation cycles with 85% of participants in this cycle noting 'very or somewhat satisfied' with the ease of the application process. However, there is an increase in those participants who noted dissatisfaction with the application process compared to prior evaluation cycles (Figure 2-9). Comments provided by participants who provided a low rating for the ease of the application process included:

- "The excel spreadsheet was pretty complicated."
- "I found it confusing."
- "Forms and information were too complicated, the electrical people had problems with the forms also."
- "I ended up having to email back and forth with Georgia Power Rep to get the application filled out."
- "Gave it a 1 because it [was] convoluted and not easily understood without lots of help from ICF staff."
- "Application was difficult to understand."

*Figure 2-9. Participant Satisfaction with Application Process Trends**



*Totals may not sum to 100% due to rounding
Source: Custom/Prescriptive Participant Survey. Questions Q19. "Please rate your level of satisfaction with different aspects of Georgia Power's Commercial Energy Efficiency Program using a 1 to 10 scale where 1 is "extremely dissatisfied" and 10 is "extremely satisfied"

Overall satisfaction ratings from participating contractors were high regarding the clarity of program application requirements (8.6 mean rating out of 10) but lower for 'your experience with the online application portal' (7.0 mean rating out of 10). Comments provided by participating contractors who rated their experience with the online application portal a 6 or lower included:

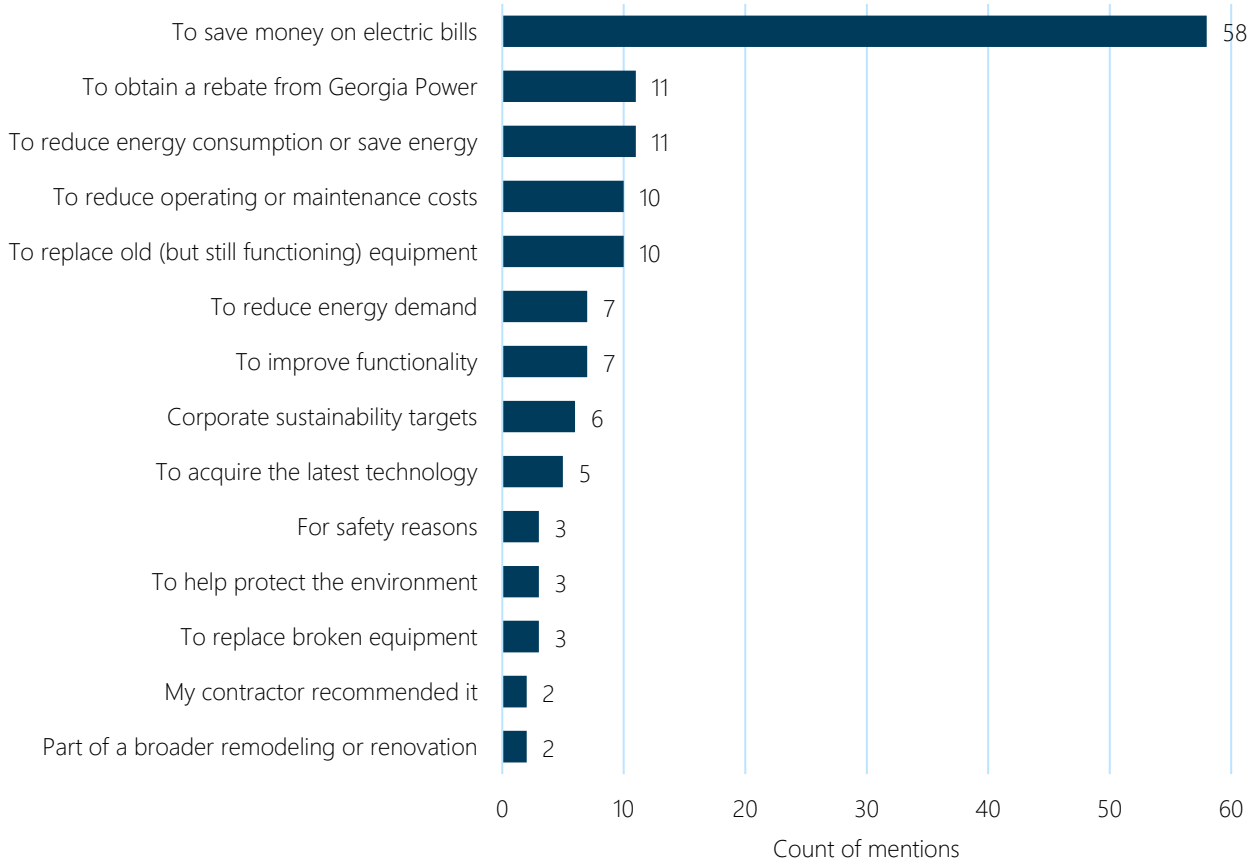
- "I don't think it's very user friendly and it works slow at times."
- "Georgia [Power] programmers of this online application portal should sit down with end-users so that they can produce something easy to complete."
- "It will not let you go from screen to screen to enter the information between what is available to me to save it and go back and add the stuff that is not available and need to procure."
- "It is counter intuitive."
- "Their new ID codes are beyond difficult, they recently changed it and their coding system has like 4000 codes now, and I usually just guess."

2.5.3 Market Motivators and Barriers

Participants were asked what important factors were included in their decision to install energy efficiency equipment through the program (Figure 2-10). The motivation to save money on electric bills continues to

be the highest motivating factor (46% of respondents mentioned this motivator during this evaluation and 31% of respondents mentioned this motivator in the prior evaluation).

Figure 2-10. Participant Motivations to Install



Source: Custom/Prescriptive Participant Survey. Questions Q30. "What was the primary reason your company decided to install energy-efficient equipment that qualified for Georgia Power's Commercial Energy Efficiency program?" (n=126)

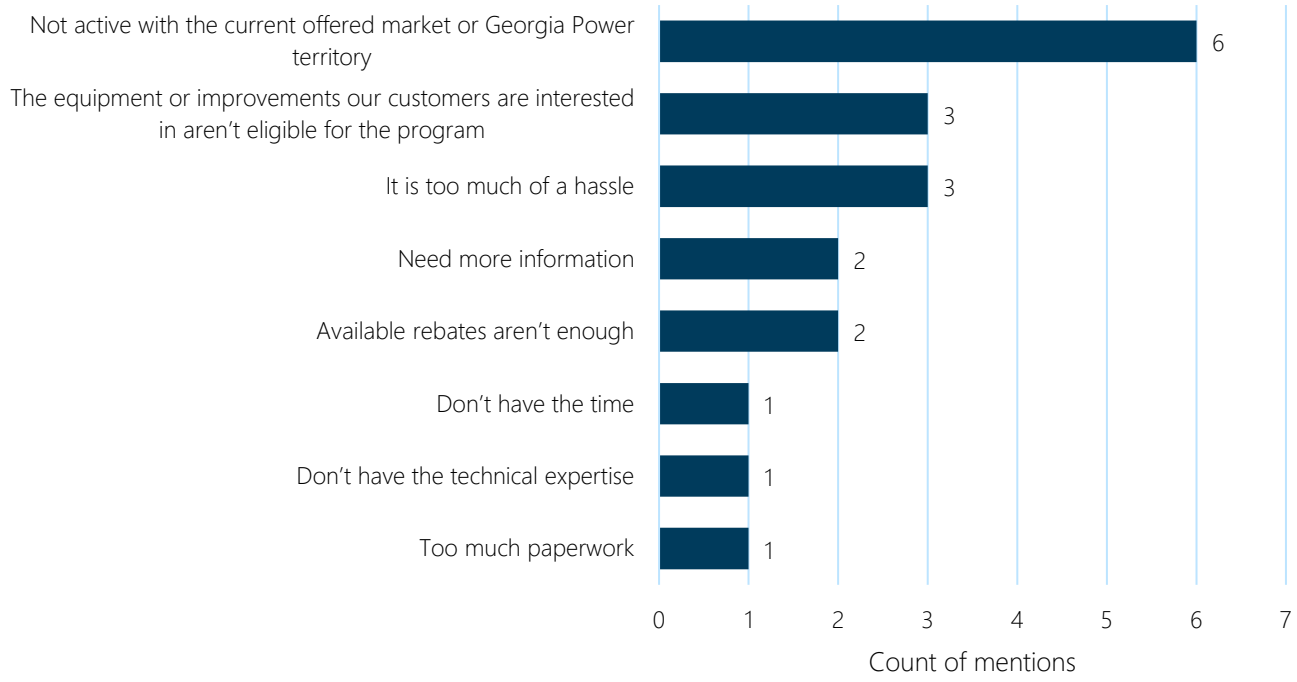
As in prior years, cost (both initial cost and overall budget limitations) was the largest barrier to participation. Cost was noted by 31% of participants and 52% of nonparticipant respondents, and budget limitations were noted by 19% of participants and 10% of nonparticipant respondents. Twelve percent (12%) of participants and 10% of nonparticipant respondents noted no barriers to participation. Fewer participants have sited "lack of technical knowledge and understanding of eligible measures" as a barrier since 2014, which is a positive indication that the overall commercial market is becoming more informed and knowledgeable of the program and technical information around energy efficiency.

Not surprisingly, 75% of participants noted that rebates (higher incentives) or lower costs of equipment are the best ways for Georgia Power to help them overcome barriers, with the next most common motivator being "providing more information on energy efficiency and program offerings".

Noted barriers to customer participation were similar for contractors with high initial cost and budget limitations mentioned most often by participating contractors (68%) and nonparticipating contractors (67%). And again, not surprisingly, offering and/or increasing incentives was mentioned as the best way for Georgia Power to help their customers overcome these barriers. Both participating and nonparticipating contractors agreed with customer motivations for implementing energy efficiency projects, stating 'energy savings', 'lower energy bills', and 'lower operating and maintenance costs' as the top reasons.

When nonparticipating contractors were asked what has kept them from submitting projects in the Commercial Energy Efficiency program in 2023, six responded (22%) they are not active in the current offered market or Georgia Power territory (Figure 2-11). A handful of the nonparticipating contractors also indicated 'customer eligibility' and 'the overall program is a hassle' as barriers to participation.

Figure 2-11. Nonparticipating Contractors Greatest Barrier to Participation in the Program



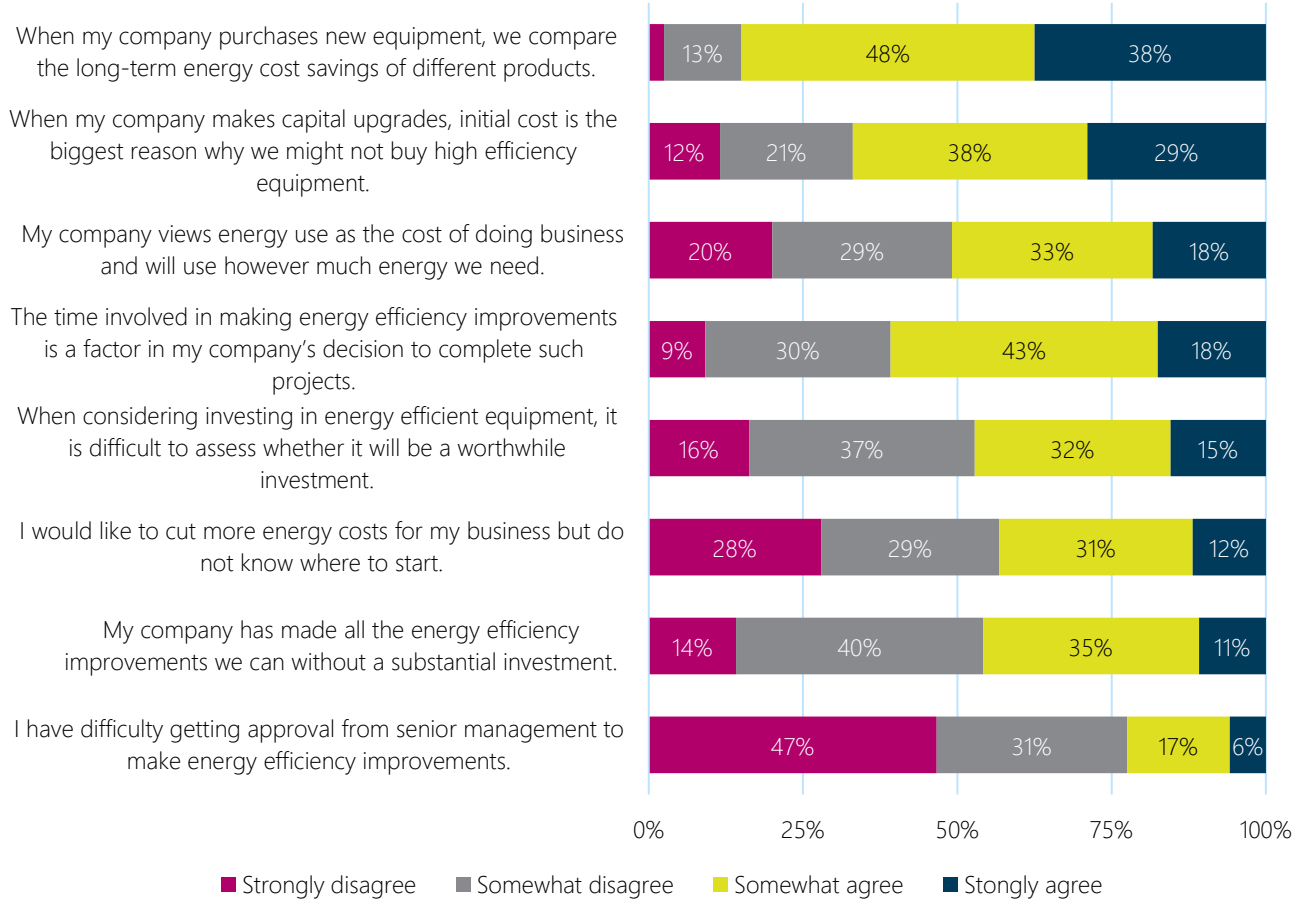
Source: Commercial Nonparticipating Contractor Survey Q10: ""What kept you from submitting any projects through the Georgia Power Commercial Energy efficiency program in 2023?" n=19

2.5.3.1 Energy Efficiency Behavior and Market Changes

The evaluation team assessed customer agreement with a variety of statements regarding decision making for energy efficiency improvements. Based on these responses, there are opportunities for repeat participation, as all Custom participants and 95% of Prescriptive participants noted they are 'somewhat' or 'very' likely to participate in a Georgia Power program again. However, 46% of participating respondents and 52% of nonparticipating respondents stated that they strongly agree or somewhat agree to the

statement "We have made all the EE improvements we can without a substantial investment." In addition, 51% participants and 69% of nonparticipating respondents strongly or somewhat agreed with the statement "We view energy use as the cost of doing business and will use whatever amount of energy needed." Around half of nonparticipating respondents strongly agreed with the statement that "When my company makes capital upgrades, initial cost is the biggest reason why we might not buy high efficiency", where this was 'strongly agreed' by 29% of participants (Figure 2-12). These statements, along with budget limitations and high initial cost as the largest barriers to participation, indicate that targeted outreach and education will be important factors for Georgia Power to focus on moving forward. Education focused on long-term benefits will be important to increase repeat participation in the program, since the 'low hanging fruit' may have already been picked and opportunities for repeat participation exist in measures that may require a higher initial investment.

*Figure 2-12. Participant Opinions on Energy Efficiency Investments**



*Totals may not sum to 100% due to rounding

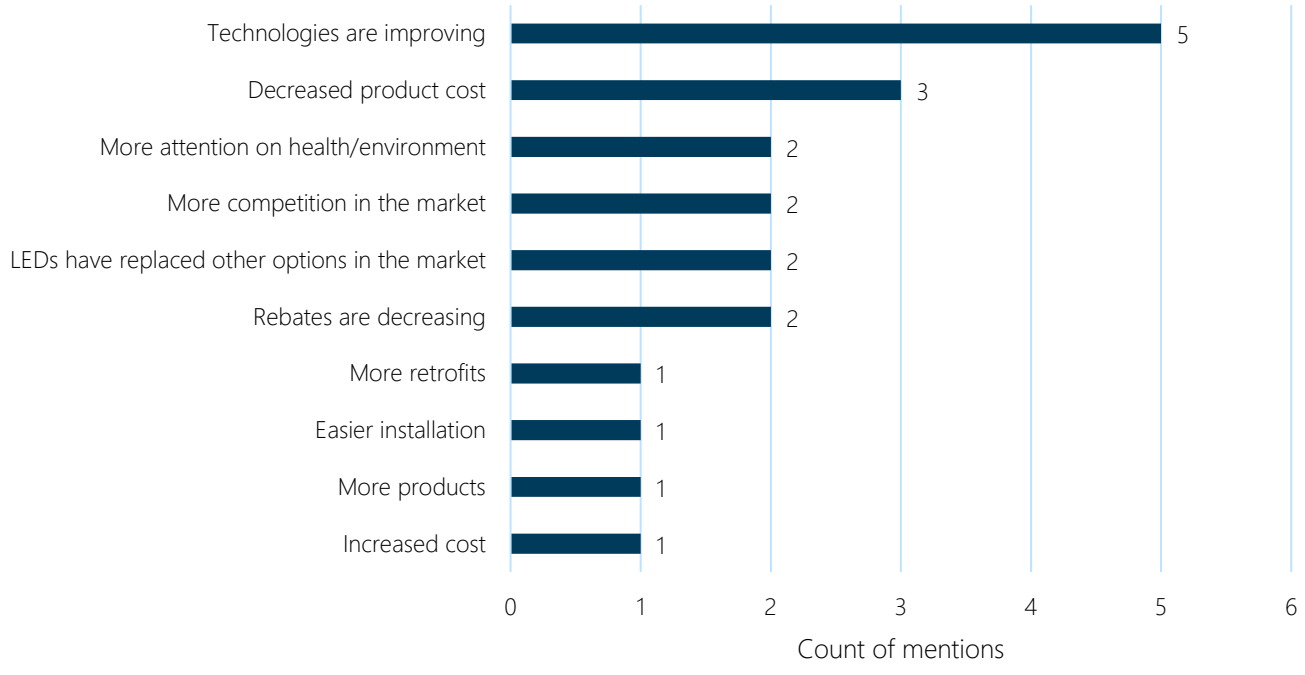
Source: Custom/Prescriptive Participant Survey. Questions Q29. "For each of the next statements, do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree?" n=varies based on program component ~121

Reaching nonparticipants for future participation will have its challenges, but like participants, it will be important to educate these customers on the long-term benefits of energy efficiency so that they can see past the initial high cost.

Both participating and nonparticipating contractors saw an increase in the level of sales of high-efficiency equipment over the past few years. Notably, 63% of participating contractors have noticed an increase in the sales, with most mentioning an increase in lighting sales. Forty-eight percent (48%) of nonparticipating contractors noted an increase in sales as well (however, this 48% is down by almost 20% from the prior evaluation).

A positive sign toward overall market transformation is that 81% of nonparticipating contractors indicated that they are actively promoting energy efficiency and 72% of participating contractors 'always' promote Georgia Power's program to customers. In addition, nonparticipating contractors stated that customers ask about or request energy efficiency products 48% of the time, indicating an opportunity for program participation if contractors are educated about program opportunities. When asked what changes respondents have noticed in the market, nonparticipating contractors predominantly noted the introduction of new technologies and greater customer interest in energy efficiency (Figure 2-13). New technologies mentioned include variable frequency motors and drives, custom lighting fixtures, heat pumps and higher SEER options for HVAC.

Figure 2-13. Nonparticipating contractors observed market changes



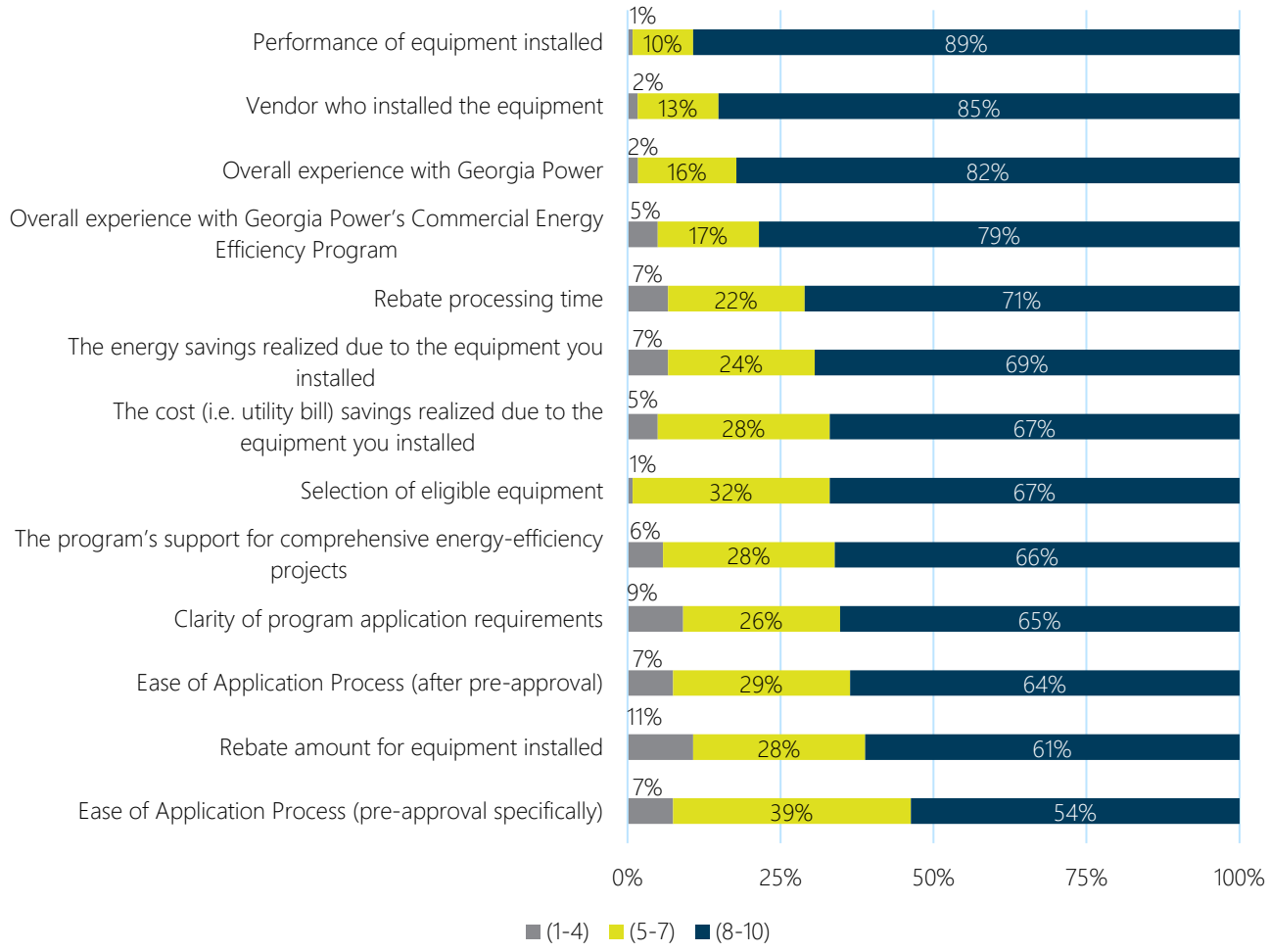
Source: Custom/Prescriptive Nonparticipating Contractor Survey. Questions Q19. "What changes, if any, have you observed in the market for energy-efficient products in the last few years?" n= 21

2.5.4 Satisfaction and Overall Program Experience

Satisfaction with the program and with Georgia Power overall was very high (8.67 on a 10-point scale). The highest level of satisfaction among participants was with the performance of the equipment installed (9.24) and the installation contractor (9.02). Satisfaction is lowest with the rebate amount and the ease of pre-approval specific application process[11] (Figure 2-14). It is unsurprising that satisfaction with the rebate amount is lower than other categories, as most end-use customers will indicate that higher incentives are preferred. In addition, satisfaction compared to the prior evaluation cycle was relatively similar, with slight increases in satisfaction with the 'rebate processing time' and a slight decrease in the 'energy savings realized', the 'cost savings realized', the 'clarity of program application requirements', and the 'ease of the application process (after pre-approval)'.

[11] Note that participants were informed that the pre-approval process was not a requirement to participate.

*Figure 2-14. Participant Satisfaction with Various Aspects of the Program**

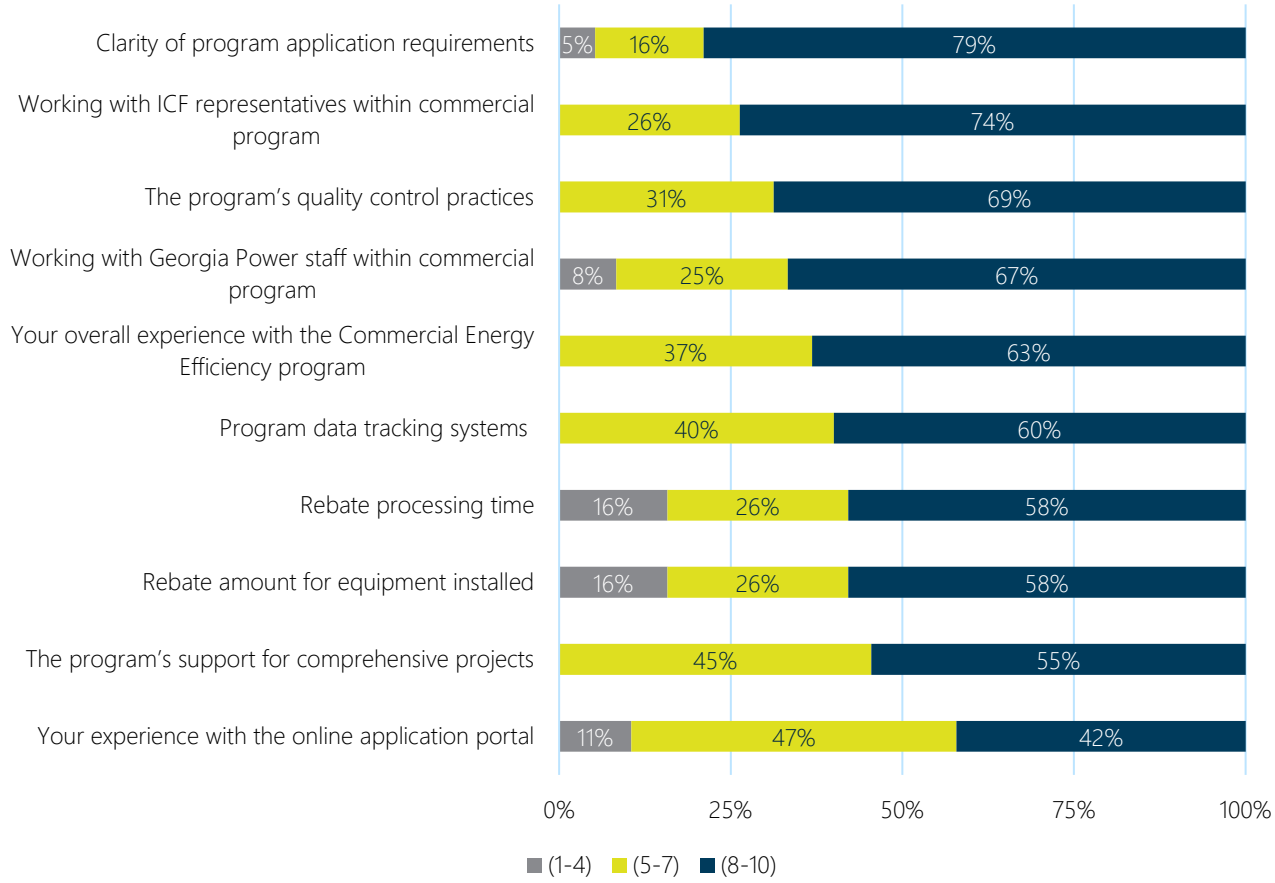


*Totals may not sum to 100% due to rounding

Source: Custom/Prescriptive Participant Survey. Questions Q19. "Please rate your level of satisfaction with different aspects of Georgia Power's Commercial Energy Efficiency Program using a 1 to 10 scale where 1 is "extremely dissatisfied" and 10 is "extremely satisfied" n=121

Satisfaction among participating contractors is highest in 'clarity of program application requirements' and 'working with ICF staff'. The lowest satisfaction results were with 'the program's support for comprehensive projects' and the 'online application portal' (Figure 2-15). Satisfaction among participating contractors compared to the prior evaluation slightly increased for 'clarity of program application requirements', 'the program's quality control practices', and 'program data tracking systems'. Satisfaction with the 'experience with the online application portal' declined from the prior evaluation and is an area that Georgia Power should consider researching to ensure this decline doesn't continue.

*Figure 2-15. Participating Contractor Satisfaction with Program Aspects**



*Totals may not sum to 100% due to rounding

Source: Custom/Prescriptive Participating Contractor Survey. Questions Q17. "I would like to know your level of satisfaction with different aspects of Georgia Power's Commercial Energy Efficiency Program using a 1 to 10 scale where 1 is "extremely dissatisfied" and 10 is "extremely satisfied" n=varies based on satisfaction component ~19

Nonparticipating contractors were asked about their overall satisfaction with Georgia Power. Generally, the results show that the majority of respondents are satisfied, with more than half of respondents providing a

rating of 8 or higher, and one respondent providing a rating under 5. This satisfaction has decreased in comparison to the 2021 evaluation, with the mean rating decreasing from 8.54 to 7.62.

Comments provided by respondents when asked if, overall, there is anything else Georgia Power could do to serve their company's needs with regards to saving energy included:

"Improve electric car charger rebate and requirements, continue working on renewables and alternatives."

"Have Georgia Power recommend reputable installers or have a partner that works with Georgia Power that can install the equipment."

"More clear information, network of approved contractors."

2.6 Cross-Cutting

2.6.1 Nonparticipant Survey

Nonparticipants are defined as Georgia Power customers who have not participated in one of Georgia Power's commercial energy efficiency programs in the last two years. Seventy-four percent (74%) of nonparticipant respondents use electricity as their primary source of heating fuel and 49% own their facility.

Eighty percent (80%) of nonparticipants had not heard of Georgia Power's commercial programs prior to the survey. The majority of those who were aware stated they are 'not too' or 'somewhat familiar' with Georgia Power commercial programs and when asked if they could name any specific commercial programs, a specific program was not mentioned but lighting and HVAC incentives were most mentioned. As mentioned earlier, of those who were aware of the commercial programs, the majority heard about the programs through Georgia Power (predominately via email).

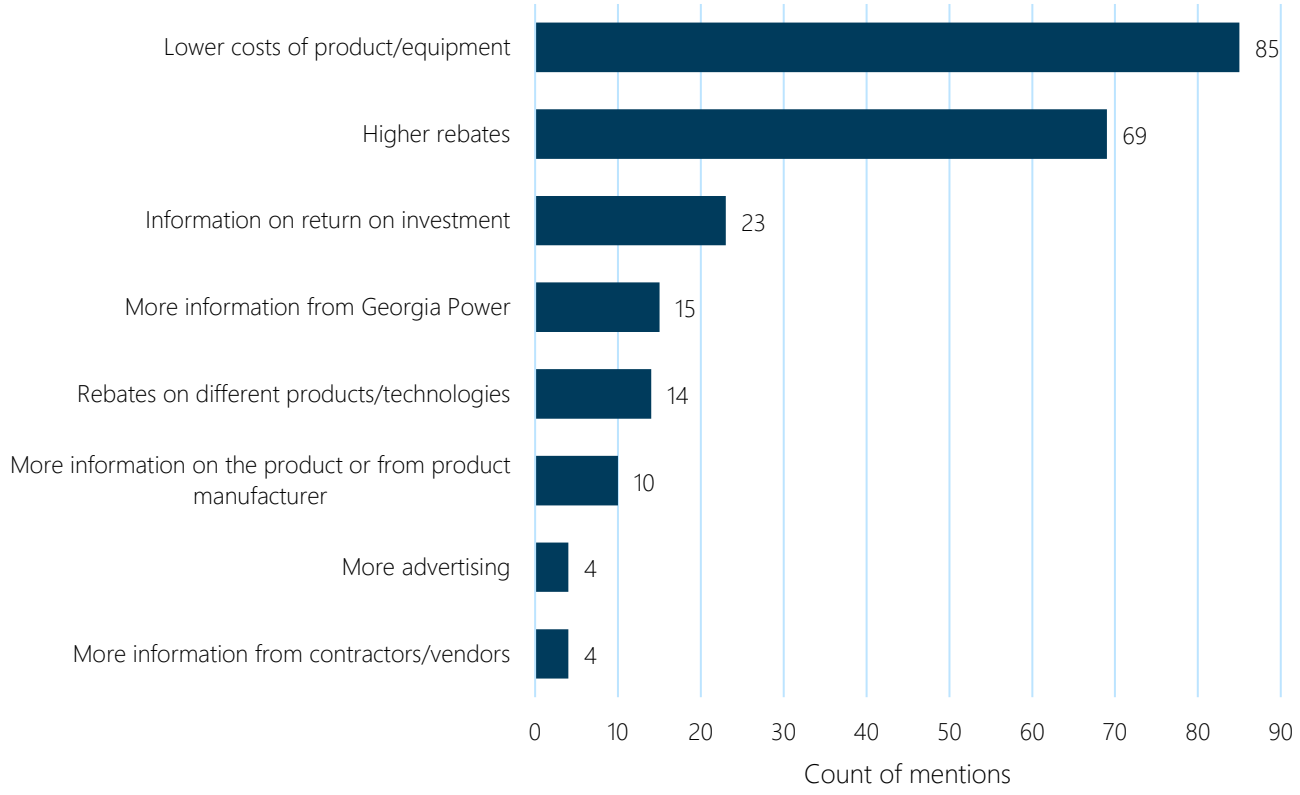
Half of all responding nonparticipants stated they are 'somewhat' or 'very' likely to participate in a Georgia Power program in the next six months. Of those who stated they were not likely to participate, the majority stated that they 'didn't know enough about the program' and that 'their facility was already energy-efficient'. As such, it is important to understand what will motivate customers to participate in the program. The largest motivator to implement energy efficiency purchases or upgrades is lower costs of energy-efficient products/equipment (40%) and 33% noted that higher rebates would have an impact on their decision to

More public knowledge of service --more advertising so that it shows the benefits of it for both Leaser & Landlords or owners.

-Nonparticipant Respondent

invest in energy-efficient equipment (Figure 2-16). While not knowing about the program appears to be the largest barrier to participation, ultimately decisions will be made on initial cost (the top mentioned barrier to implementing energy efficiency as noted in Section 2.5.3).

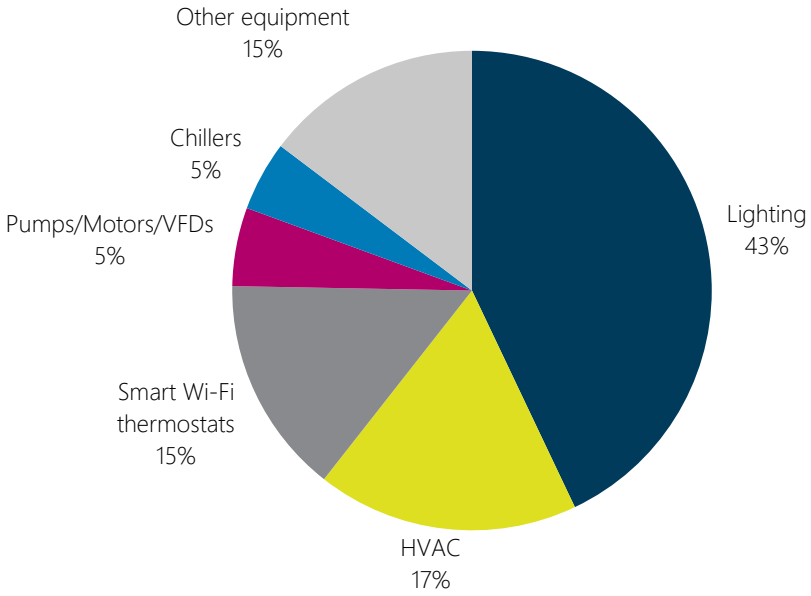
Figure 2-16. Nonparticipant Motivators to Energy-Efficient Upgrades/Purchases



Source: Commercial Nonparticipant Survey. Questions Q17. "What would motivate your business to make more energy-efficient purchases or upgrades on current equipment?" n=212

Nonparticipants noted that lighting is the most likely type of equipment that they will consider implementing (Figure 2-17), with 43% mentioning this when responding to "Which type of equipment are you most likely to consider upgrading through a program to improve the energy efficiency of your facility". Notably, the percentage of lighting is down by 20% from the prior evaluation and mentions of HVAC, pumps, and motors increased in comparison to the prior evaluation.

Figure 2-17. Nonparticipant Type of Equipment Considered for Upgrading



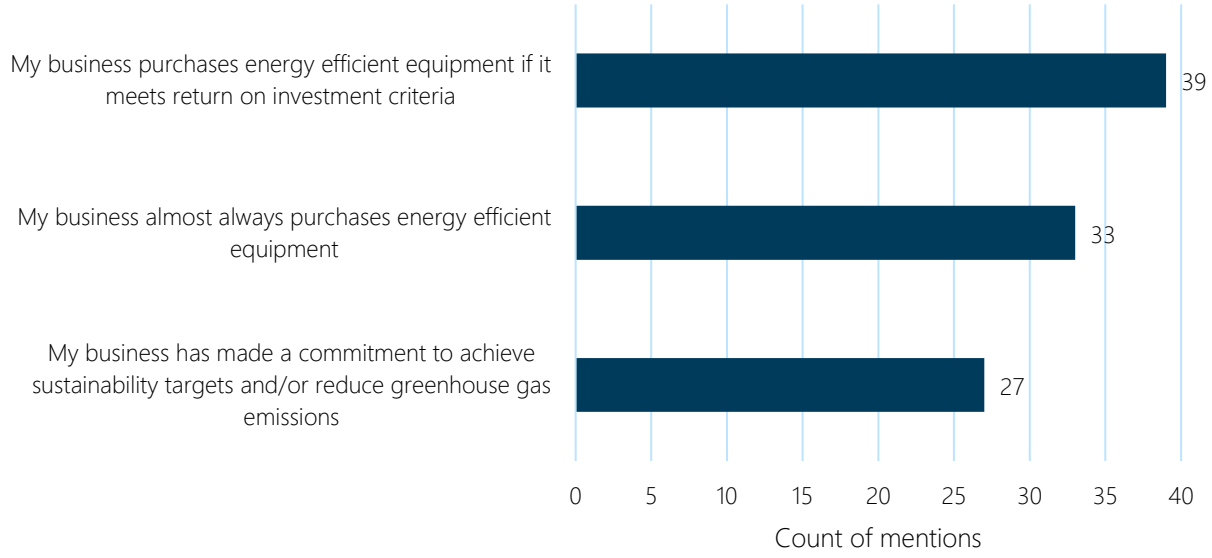
Source: Commercial Nonparticipant Survey. Questions Q10. Which type of equipment are you most likely to consider upgrading through a program to improve the energy efficiency of your facility? n=161

When nonparticipants were asked "When you consider all expenses, how important would you say is reducing energy costs to your business?", 66% of respondents rated 8 or higher on a 1-10 scale where 1 is 'not at all important' and 10 is 'very important'.

In addition, 75% of respondents noted that their business didn't have a corporate policy in place for energy efficiency, sustainability, or carbon reduction, indicating that assistance from Georgia Power on the benefits of energy efficiency and the programs offered could help boost these nonparticipants who otherwise don't have corporate policies to support this need. Of the respondents that do have a corporate policy in place for energy efficiency, sustainability, or carbon reduction, (n=70 respondents) 56% of those respondents noted their business also has a ROI criteria for energy-efficient purchases and about one-third (38%) said that their business has made a commitment to achieve sustainability targets (Figure 2-18). However, about half of respondents noted that their company does not typically require a payback period when making energy-efficient upgrades or for other (non-energy-efficient) equipment upgrades.

> Getting more information out to business customers. Most people at my level aren't going to look at it, ROI is often not going to make the upgrades worthwhile for my industry.
>
> -Nonparticipant Respondent

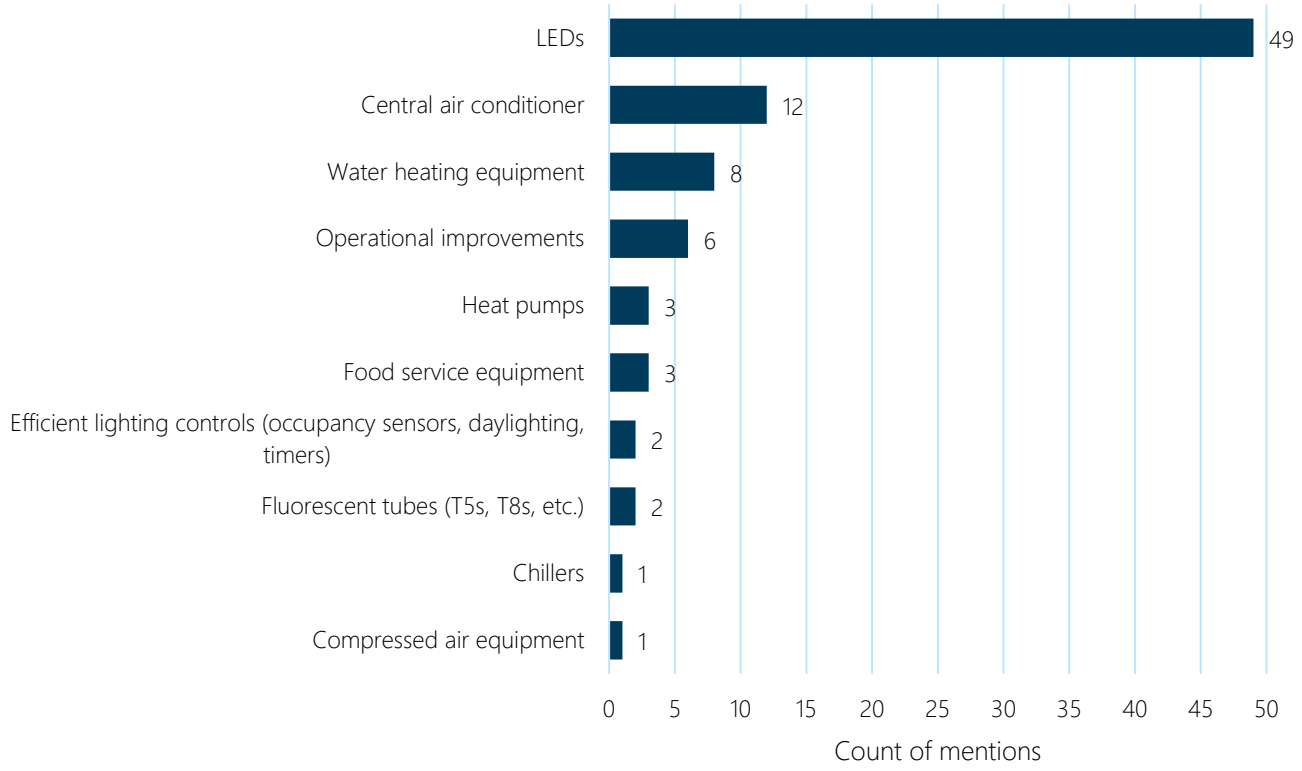
Figure 2-18. Nonparticipant Business Practices



Source: Commercial Nonparticipant Survey. Questions Q14. "Which of the following applies to your organization?" n=70

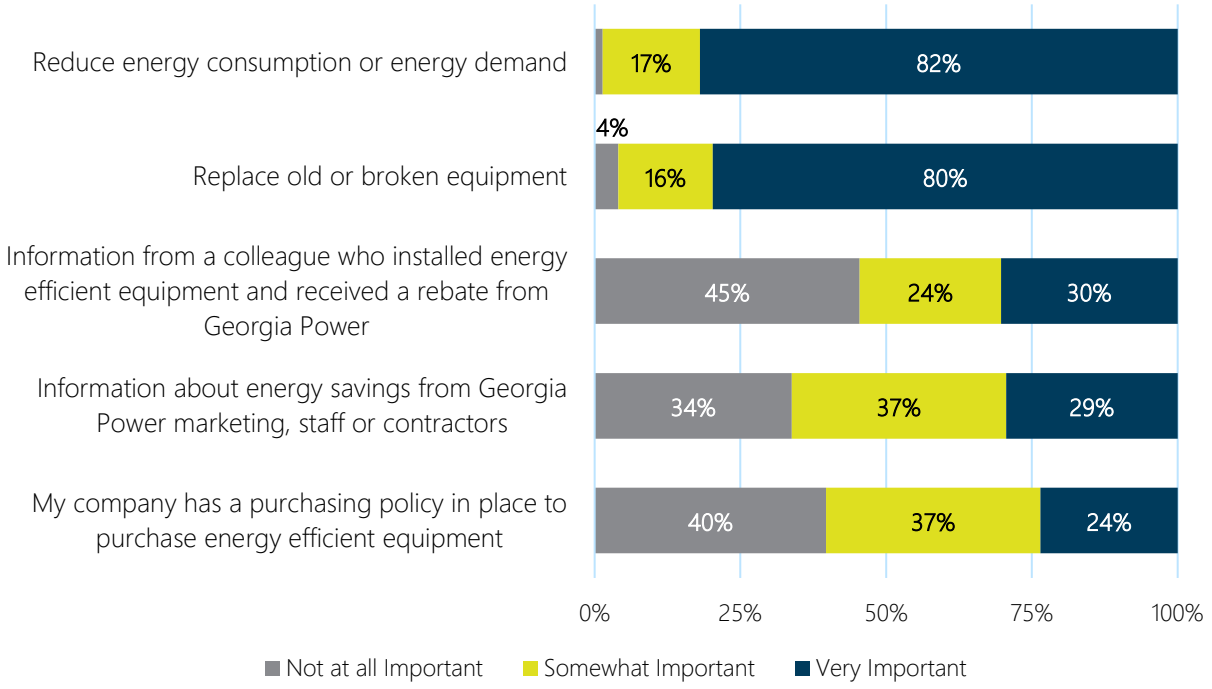
Interestingly, one-quarter of respondents (n=74) noted that they have installed energy-efficient products or equipment in the past year and of these, the majority (68%) noted LEDs as the improvements made (followed by central AC) (Figure 2-19). When asked the reason for implementing these measures, reducing energy consumption, and replacing old or broken equipment were the most important reasons noted (Figure 2-20). These self-reported energy efficiency actions suggest that the lighting market is transforming and that the time to capture savings from lighting projects is limited. Encouragingly, around one-quarter of nonparticipants noted that information about energy savings from Georgia Power and information from a colleague who participated in the Georgia Power program was very important in their decision to install their energy-efficient improvements. This indicates that customer energy efficiency motivations outside of the program are being driven by Georgia Power's efforts to promote the benefits of energy efficiency. Lastly, in comparison to the prior evaluation, nonparticipants noted a 20% increase in the motivating factor 'to reduce energy consumption', which could suggest an increased understanding of and desire to reduce energy consumption in businesses.

Figure 2-19. Type of Energy Efficiency Improvements/Products/Equipment Installed by Nonparticipants



Source: Commercial Nonparticipant Survey. Questions Q22. "What type(s) of energy efficiency improvements, products, or equipment did you install? n =74

Figure 2-20. Reasons for nonparticipant energy efficiency implementation



*Totals may not sum to 100% due to rounding
Source: Commercial Nonparticipant Survey. Questions Q23. "How important were each of the following on your decision to install these energy-efficient improvements?" n =~74

Nonparticipant satisfaction with Georgia Power overall was high, with an average satisfaction rating of 7.8 on a 10-point scale, down from 8.2 in the prior evaluation. When asked "Does knowing that Georgia Power offers energy efficiency programs impact your satisfaction rating of Georgia Power?", 29% of respondents stated that it did.

2.6.2 Distributors

The evaluation team conducted telephone interviews with one (1) HVAC and five (5) Food Service distributors to understand their perspective on the move of measures from the previously offered Midstream program into the Prescriptive program. We targeted those distributors who were affiliated with the Midstream program offered during the 2020-2022 program cycle and who have sold products for which Georgia Power provided an incentive through that program. Topics included program awareness, marketing tools and conditions, customer barriers and motivators, satisfaction with HVAC and Food Service measures included in the Prescriptive program, and suggested recommendations for improvement.

Four of the six distributors were aware that the measures previously offered through the Midstream program were still available to customers through the CEEP, with all four learning about the shift from a Georgia

Power representative. Respondents were also asked how familiar they are with the measures and rebates that were moved to the CEEP, with most stating that they are 'very familiar'.

Distributors were asked how their company encourages the sale of energy-efficient equipment, with the majority stating that they include rebates in quotes and use physical marketing such as brochures, banners, or mailers. Only one distributor has seen Georgia Power's current marketing materials related to the CEEP, despite most being aware of the program.

> "The incentives alone weren't enough. It was more a full package or what the offering was in total; the quality, rebate, energy savings. No one purchased solely because of the rebate"
>
> -Distributor

Similar to contractors, distributors stated that energy savings and lower operating costs are believed to be primary reasons customers install energy-efficient equipment and all but one distributor felt rebates were sufficient to motivate continued purchase of energy-efficient products.

Overall, all distributors were 'satisfied' or 'neutral' in rating their satisfaction with Georgia Power overall, and no distributor responded they were 'unsatisfied'. Of the three respondents who were 'neutral', some reasoning behind their ratings included:

- "Bring back the test kitchen [Customer Resource Center]."
- "More consistency of programs. They offer something and it gets pulled after a year, so customers never have time to learn about the programs if they keep changing."

Finally, distributors were asked if they have any suggestions for improvements to CEEP. Suggestions included:

- "Bring back the customer resource center/test kitchen." (two food service participant distributors)
- "Make the marketing materials more accessible. Customers have to look for it and you don't know what's not there." (one food service participant distributor)
- "Some projects can be simplified." (one HVAC participant distributor)

2.6.3 Trade Groups

We spoke with three trade group representatives with a diverse set of experiences, including an energy engineering professionals association, a policy/advisory group, and an electrical distributor. We asked respondents about their perspectives on the current state of the market within the industries they work in, as well as future trends and changes they see on the horizon.

Overall, respondents felt energy efficiency continued to be an important topic within their respective industries. However, decision-making has become more complex, with additional factors influencing customer priorities. Below are the top themes that emerged from this research.

2.6.3.1 Electrification

Electrification emerged as a top concern of larger commercial customers and is building momentum in the market driving larger sustainability decisions. One respondent, who worked with large commercial and multifamily real estate customers, cited evolving internal corporate sustainability goals that focus on greenhouse gas reduction as driving this push. Additionally, some larger real estate and property management firms operate internationally, meaning more aggressive sustainability goals from Europe and elsewhere can filter into North American markets.

Another respondent indicated a push amongst the largest national accounts in the nation to electrify – citing examples such as corporations switching to electric forklifts - but that this push has created challenges and concerns around the significant added electric load electrification creates. Similarly, this interviewee indicated that while the push to electric vehicles (EVs) in commercial segments like rental cars has slowed somewhat, the transition to EVs within fleets are still gaining momentum amongst large national accounts and retailers.

2.6.3.2 Lighting

The general consensus among interviewees is that the commercial market has continued to transform significantly in recent years towards LEDs, similar to findings identified from contractors who stated that they continue to see an increase in the sales of energy efficiency lighting equipment. Interviewees felt that national accounts and larger firms had generally addressed lighting as low-hanging fruit, and had shifted their focus to other types of projects within their facilities.

The lighting distributor we spoke with indicated the majority of products they stock are LEDs. This interviewee indicated that there are some segments, such as local government or municipalities, that are still holding on to the "old equipment" but generally expected within 5-10 years the market would be fully transformed to LED.

When asked about the opportunity for lighting controls within the market, this interviewee noted that it can be sometimes difficult to convince organizations to invest in controls when retrofitting to LEDs as the efficiency gains of controls are comparatively small when compared to the jump in efficiency gained by retrofitting to LEDs. This interviewee said "But LEDs are already efficient, so they're like – I'm already saving a lot of energy with LEDs, I don't need the extra 4% the controls will be saving me. We do tell people that savings might be small – but occupancy savings can extend the life of the fixture and the lamp so you have to change it out less. Maintenance is a big selling point."

2.6.3.3 Account management and support for large customers and national accounts

An interviewee who interacted with national accounts indicated a need for deeper, customized support from utilities in encouraging and supporting their energy efficiency needs. This interviewee indicated that a number of forces at play – including the push to electrification and other regulatory issues, such as the

phasedown of Hydrogen, Fluorine, and Carbon (HFC) refrigerants - is causing concern among large customers in terms of added electric load.

While acknowledging this type of customized service can be challenging, they indicated that as the markets move away from low-hanging fruit and towards more complex sustainability goals, this type of support is needed to make sure utilities ensure efficiency remains top of mind. This interviewee said that even though many corporations have considerable sustainability goals, the teams responsible for implementing these solutions can still be quite small and are often overwhelmed. Another interviewee indicated they felt there was still a considerable need for education, especially on how to stack utility incentives with other opportunities like federal tax credits, which can be difficult for customers to understand.

2.7 Conclusions and Recommendations

Conclusion 1: The Custom Program NTG ratio has historically changed a reasonable amount and is largely dependent upon the specific projects and customers in the evaluation year. These results may not be a reasonable estimate for future program years as implemented measures and projects will change every year and program cycle.

> Recommendation 1: Consider a multi-year rolling assessment of NTG or deem a reasonable NTG for the Custom program. Recent historical NTG trends find the Custom NTG closer to 80% than the 65.4% NTG found in this evaluation year.

Conclusion 2: This evaluation found under-reporting of energy savings for Prescriptive Lighting projects resulting from conservative HOU assumptions.

> Recommendation 2a: Consider updates to HOU assumptions for business types with the highest levels of misalignment. Detailed results of the HOU study by business type are included in Section 5.7 of the Commercial Lighting HOU analysis.
>
> Recommendation 2b: Provide additional guidance to contractors on when to apply the '24/7' characterization to further refine reported savings or introduce additional quality control processes to identify high usage lighting within specific space types.

Conclusion 3: There are opportunities for repeat/new participation as all Custom participants and 95% of Prescriptive participants noted they are 'somewhat' or 'very' likely to participate in a Georgia Power program again and 53% of nonparticipant respondents stated they are 'somewhat' or 'very' likely to participate in a Georgia Power program in the next 6 months. In addition, 57% of participants who responded to the survey stated that they have participated in a Georgia Power program in the past.

> Recommendation 3: Consider doing a directional analysis of follow-up opportunities that may exist amongst those customers who have participated in the commercial program over the past 3-4 years, including firmographic data of these customers. A possible outcome of the analysis would be an assessment of remaining potential across participants, measure types, business types, and location.

Conclusion 4: Repeat and future participation could be challenging to obtain, because many companies view energy use as a cost of doing business. Fifty-one percent (51%) of participants and 69% of nonparticipating respondents strongly or somewhat agreed with the statement "We view energy use as the cost of doing business and will use whatever amount of energy needed." Lastly, high initial costs and overall budget are the largest barriers to participation as 46% of participants and 52% of nonparticipant respondents 'somewhat or strongly agree' with the statement that "We have made all the EE improvements we can without a substantial investment".

Conclusion 5: Seventy-five percent (75%) of nonparticipants noted that their business didn't have a corporate policy in place for energy efficiency, sustainability, or carbon reduction. Of the respondents that do have a corporate policy in place a little more than half noted their business also has an ROI criteria for energy-efficient purchases.

> Recommendation 5a: Continue to explore new and different ways to communicate the long-term benefits of energy efficiency above and beyond the typical 'low-hanging fruit'. As the lighting market continues to transform, it will be important to educate customers on technologies that may have higher initial costs. Educating customers on the long-term benefits of lowering operating and maintenance costs will help customers see past initial cost concerns and help with new and repeat program participation.
>
> Recommendation 5b: Continue to market the many benefits of energy efficiency and the programs offered to help boost participation in those customers who don't have corporate policies that otherwise push the need for energy efficiency in their organization. Targeting discussions around ROI could encourage discussions in decision makers who have sustainability targets and policies in place in their organization.

Conclusion 6: Opportunities for savings associated with lighting measures are starting to decline as the lighting market continues to transform to predominantly LEDs. Responses from Trade Groups supported the suggestion that the lighting market is continuing to transform and one-quarter of nonparticipants noted that they have installed energy-efficient products or equipment in the past year and of these, the majority were LEDs installations. Conversely, less than 2% of the lighting measure savings in 2023 through Georgia Power's Commercial program were lighting controls. It was noted in the Trade Group interviews that it can sometimes be difficult for customers to invest in controls when retrofitting to LEDs as the efficiency gains of controls are comparatively small when compared to the jump in efficiency gained by retrofitting to LEDs.

> Recommendation 6a: Georgia Power should lean into the remaining savings available from lighting measures, consider targeting segments such as local government or municipalities who may have been 'holding onto' old equipment but could be required to invest in efficient technologies with recent updates to federal standards and rules.
>
> Recommendation 6b: Georgia Power should consider engaging in all lighting trade allies, including electrical distributors and lighting sales representatives. Consider "expedited" lighting incentives paid through lighting procurement cycle while maintaining customer program engagement.
>
> Recommendation 6c: Increase marketing and customer information around advanced lighting controls as there is a lot of opportunity for future savings. Also focus on non-energy savings for lighting controls such as reduced maintenance costs, increased fixture life, improved light quality, and improved safety and security.

Conclusion 7: Participants are extremely satisfied with the program, with the highest satisfaction with the performance of the equipment installed and installation contractor. Satisfaction levels were very similar to the prior evaluation cycle with a slight increase in the 'rebate processing time' and the largest decrease in satisfaction with 'the cost savings realized due to the equipment you installed'. There was also a slight decrease with the 'ease of the application process.'

Conclusion 8: Satisfaction among participating contractors is high, with the 'clarity of program application requirements' and 'working with ICF staff' receiving the highest satisfaction ratings. The lowest satisfaction results were with 'the program's support for comprehensive projects' and the 'online application portal.'

> Recommendation 8: Satisfaction with the 'experience with the online application portal' declined from the prior evaluation and is an area that Georgia Power should consider researching to ensure this decline doesn't continue.

Conclusion 9: Educating contractors about Georgia Power's programs and energy efficiency has a positive impact toward customer awareness and education. Most nonparticipating contractors (81%) indicate that they are actively promoting energy efficiency and 72% of participating contractors 'always' promote Georgia Power's program to customers. In addition, nonparticipating contractors stated that customers ask about or request energy efficiency products almost half of the time, indicating additional opportunities for program participation if contractors are educated about program opportunities. Of the nonparticipating contractors that were registered Trade Allies in 2021 or 2022, the top reason for why they did not register in 2023 was because they thought they were still registered (29%).

> Recommendation 9: Contractors are the backbone of the CEEP and continued engagement with and training of these contractors is key to program success. Continue to offer trainings for contractors, maintaining key attention on information beyond cost and energy savings to encourage implementation of higher cost measures. Ensure that the registered trade ally list is maintained and updated and conduct occasional outreach to contractors who are not engaging in the program.

3 Small Commercial Direct Install Program

The Georgia Power SCDI program delivered cost-sharing incentives to small businesses for qualifying improvements through seven participating contractors. Participation in the program from January 1, 2023 through December 31, 2023 totaled 1,502 measure types from 400 unique projects.[12] During this period, the program's evaluation resulted in a RR of 77.5% for energy savings, and 52.9% for demand savings at 16% precision with 90% confidence. Evaluated savings were adjusted to account for installed logger findings, HVAC IFs, ISRs, differences in wattage assumptions and CFs. Most notably, the evaluation identified discrepancies in the quantity of bulbs/fixtures observed on-site versus that within the reported data. The

[12] Project total based on count of unique project numbers in VisionDSM tracking data as of April 1, 2024.

team found that some measure counts in the tracking database were based on an initial site assessment and did not reflect the final work order. These discrepancies affected the evaluated savings because the work orders and quantity of bulbs observed on-site led to a reduction in evaluated savings.

Table 3-1. 2023 Small Commercial Direct Install Program Energy Savings

Number of Measures	Reported kWh	Realization Rate	Verified Gross kWh	NTG	Verified Net kWh
1,502	13,332,273	77.5%*	10,333,776	95.9%*	9,910,091

*Realization rates rounded to one decimal place for reporting tables.

Table 3-2. 2023 Small Commercial Direct Install Program Demand Reduction

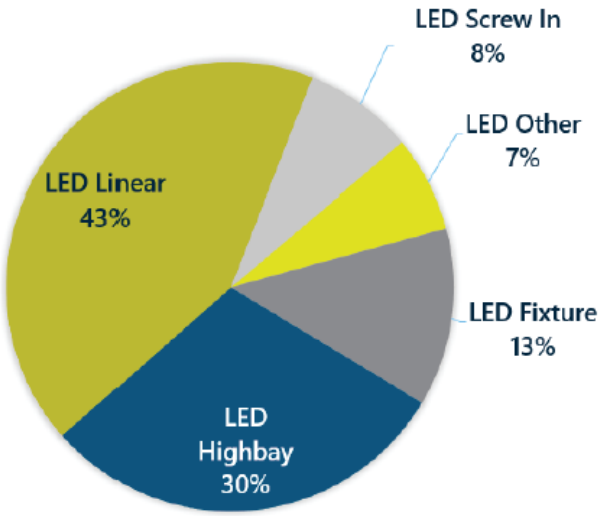
Reported kW	Realization Rate	Verified Gross Summer kW	Verified Gross Winter kW	NTG	Verified Net Summer kW	Verified Net Winter kW
3,126	52.9%	1,654	1,264	95.9%	1,586	1,212

The program achieved 9,910 MWh verified net energy savings, 1,585.9 kW of verified net summer demand reduction, and 1,212 of verified net winter demand reduction in 2023 (Table 3-1 and Table 3-2). Both participants and contractors reported positive overall satisfaction with the program in 2023. The NTG ratio of 95.9% is an increase from the previous cycle's results and reflects the program's ability to meet customer needs for the program. The following page highlights the program's accomplishments and key findings and recommendations from the evaluation period, which point to opportunities to improve communication between assessors, installation contractors, and participants to ensure that appropriate recommendations are being made for each facility and that contractors are adequately prepared to conduct installations.

SMALL COMMERCIAL DIRECT INSTALL PROGRAM

Program Participation

- 1,502 measures from 400 unique projects
- 9,910 net verified MWh saved



Evaluation Results

SCDI achieved a realization rate of **77.5%** for energy savings.

77.5%
for energy savings

Evaluation research determined a Net-to-Gross result of **95.9%** for the SCDI program.

Key Conclusions & Recommendations

CONCLUSION
A lack of accuracy in the work orders and incomplete communication from assessors to contractors affected contractor profitability and ability to complete jobs as customers expected. Evaluated savings was reduced because of the difference in work orders and quantities observed in on-site inspections.

RECOMMENDATION
Assessors should receive more site specific coaching from the program implementer (FCI) to ensure that the assessment documents recommend the proper updates and reflect necessary site details. Update the assessment report to reflect final outcomes.

CONCLUSION
When participants were able to complete their projects as planned, they expressed high levels of satisfaction with the program, driven by the cost-sharing, equipment, clarity of program requirements, and installation contractors.

RECOMMENDATION
Consider allowing contractors to perform the assessments themselves to create a more streamlined customer experience and enhance the engagement and investment in positive customer outcomes.

CONCLUSION
About half of participants installed recommended improvements, but cost is limiting the ability of others to follow through on assessment recommendations.

RECOMMENDATION
Explore whether the program can offer a multi-stage installation process for customers with limited budgets, and institute a follow-up process in subsequent years for customers who only complete a portion of the recommendations.

CONCLUSION
Coincident factors accounted for the low peak demand realization rates.

RECOMMENDATION
Include a coincidence factor in peak demand savings calculations based on evaluation results..

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3.1 Program Overview

3.1.1 Program Design

Georgia Power's SCDI program promotes the installation of eligible high-efficiency lighting equipment at qualifying commercial customer facilities with a peak demand of 120 kW or less. The program is intended to be a simple introduction to energy efficiency improvements for businesses, and it seeks to break down cost barriers to making energy-efficient facility upgrades. Georgia Power introduced the direct install design in 2014 to reach an underserved segment of the nonresidential market by providing immediate energy savings to and identifying other electric-saving opportunities for small business customers. Georgia Power is responsible for customer outreach and recruitment and for registering qualified customers with its program implementer, FCI Management, Inc. (FCI), who administers the assessment directly to customers and facilitates the direct installation and fulfillment process. FCI recruits distributors to stock and ship qualified equipment as well as contractors to perform the installations. Through a work order process, contractors submit invoices to FCI for reimbursement of the project cost share covered by the program.

3.1.2 Program Measures

The SCDI program offers qualified customers a variety of lighting measures at up to 70% off the equipment and installation cost. This incentive amount is consistent with the prior program cycle (2020-2022). Georgia Power updated the measure types from previous years by removing lighting measures serving refrigeration systems and adding LED lamp and fixture options. Georgia Power program staff said it made this change to simplify the program for customers and prevent installation issues it experienced with these measures in previous years, and to align with the participating contractor pool. Table 3-3 lists all eligible measures offered through the SCDI program.

Table 3-3. 2023 SCDI Program Qualifying Measures

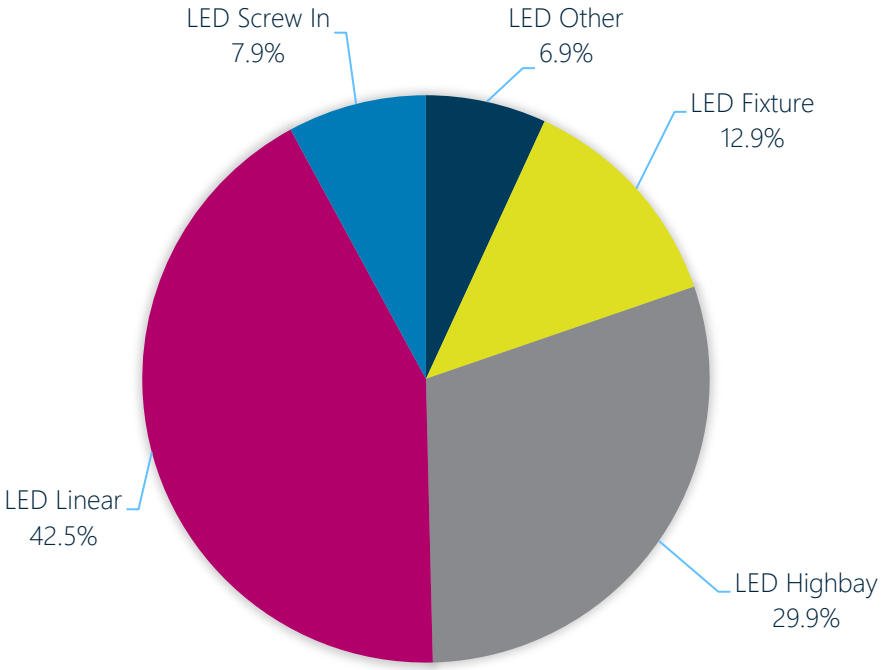
Type	Measure
LED Exit Sign	LED Exit Sign
LED Exterior Canopy	LED Canopy 28w
	LED Canopy 33w
LED Exterior Spot	Led Flood 30w
	Led Flood 60w
	Led Flood 70w
LED Fixture	12 Watt Down Light (Non Res) LED Fixture
	8'' Down Light 30W
	LED Barn Light Fixture
	LED Flat Panel 1x4 30W
	LED Flat Panel 2x2 30W

Type	Measure
	LED Flat Panel 2x4 35W
LED Highbay	LED Hi Bay UFO 100W
	LED Hi Bay UFO 200W
	LED High/Low Bay >221 to 280 Watts With Sensor Replacing 400W PSMH
	LED High/Low Bay >221 to 280 Watts Replacing 400W PSMH
	LED High/Low Bay 40 to 131 Watts With Sensor Replacing 175W PSMH
	LED High/Low Bay 40 to 131 Watts Replacing 175W PSMH
LED Linear	(1) 48in T8 Lamp LED replacing (1) 48in T8 Linear Fluorescent
	(1) 96in T8 Lamp LED replacing (1) 96in T8/T12 Linear Fluorescent
	24in LED T8 8w 35k-40k-50k CCT Selectable
	LED replacing (1) 96in T8/T12 Linear Fluorescent Type B
	T5 HO Lamp LED replacing T5 Linear Fluorescent Type B
	UTube Replacing Fluorescent UTube Type B 4000 Kelvin
	UTube Replacing Fluorescent UTube Type B 5000 Kelvin
LED Retrofit Kit	LED Retrofit Kits 2x2
	LED Retrofit Kits 2x4
Occupancy Sensor	Occupancy Sensor
LED Exterior Wallpack	Large Wall Pack 120W
	Small Wall Pack 20W
LED Screw In	A19 LED 9.5W
	LED BR/R Lamp: 11 Watts
	LED Candelabra: 4 Watts
	LED Globe: 12 Watts
	LED PAR30: 11 to <12 Watts
	LED PAR38: 15 to <16 Watts

3.2 Program Participation and Achievements

Georgia Power's SCDI program rebated 1,502 energy efficiency measures in 2023. LED linear measures represented the largest share of reported savings, with 42.5% of reported savings. Figure 3-1 shows the proportion of SCDI program reported energy savings by measure category.

Figure 3-1. 2023 SCDI Program Reported Energy Savings Proportion by Measure Category



Totals in this figure may not sum to 100% due to rounding

Energy and demand savings achievements are presented in Table 3-4 and Table 3-5.

Table 3-4. 2023 SCDI Program Achievements – Energy

Number of Measures	Reported kWh	Verified Gross kWh	Energy Savings Goal	% of Goal
1,502	13,332,273	10,333,776	23,412,299	44.1%

Table 3-5. 2023 SCDI Program Achievements – Demand

Number of Measures	Reported kW	Verified Gross Summer kW	Verified Gross Winter kW	Demand Savings Goal	% of Goal (Summer)
1,502	3,126	1,654	1,264	4,919	33.6%

3.3 Methodology

The BrightLine evaluation team used industry-standard evaluation strategies and approaches to capture feedback about the program's impact on Georgia Power's small commercial customer segment.

3.3.1 Research Questions

Table 3-6 presents the key researchable questions and the indicators and tools used to assess each aspect of the program.

Table 3-6. SCDI Program Evaluation Research Questions

Research Questions	Indicators/Areas of Investigation	Research Tools
How effective is the enrollment and participation process?	▶ Participant satisfaction with program processes ▶ Contractor experience with the work order, equipment, and reimbursement processes	Stakeholder interviews, contractor surveys, participant surveys, document review
How effective is the implementer (customer outreach, contractor outreach and training, data tracking, quality control)?	▶ Contractor rating of program training usefulness ▶ Contractor satisfaction with FCI staff ▶ Completeness of tracking data	Stakeholder interviews, contractor surveys, participant surveys, document review
How satisfied are participants with the program process and Georgia Power overall?	▶ Participant satisfaction with the program and its components ▶ Contractor satisfaction with the program and its components	Contractor interviews, participant surveys
How effective is program marketing? How aware are customers about the program?	▶ Participant program awareness source ▶ Contractor program awareness source	Contractor interviews, participant surveys
Are incentive levels sufficient to motivate energy efficiency implementation?	▶ Participant satisfaction with rebate amount	Stakeholder interviews, participant surveys
What are drivers and barriers for participation and customer demand for energy-efficient equipment?	▶ Contractor drivers and barriers ▶ Participant drivers and barriers	Contractor interviews, participant surveys

Research Questions	Indicators/Areas of Investigation	Research Tools
Does the program encourage adoption of additional energy efficiency measures?	▶ Contractor-reported demand for other energy-efficient equipment that is not available through the program ▶ Participant awareness of Georgia Power's other rebate programs	Contractor interviews, participant surveys
How effectively has the program incorporated new non-lighting measures?[13]	▶ Measure mix in program tracking data	Program tracking data
Which marketing messages and tools are most effective in encouraging participation?	▶ Participant mention of program aspects of value ▶ Customer motivations for participating	Participant surveys
What are the accurate and supportable gross energy and demand impacts of the program?	▶ Estimation and verification of equipment savings	Virtual and on-site measure review, program tracking data
What are the accurate and supportable net energy and demand impacts of the program (assess NTG)?	▶ Participant ratings of program influence on equipment installed	Contractor surveys
Does measure installation vintage align with measure baseline definition?	▶ Measure-level savings assumptions	Document review, measure review, program tracking data

3.3.2 Evaluation Activity Summary

The evaluation team addressed the research objectives using the methods shown in Table 3-7. The evaluation team contacted the 382 unique participants from 2023 and received 63 responses (16% response rate). To encourage participants to take the survey, the team offered a chance to win one of three $100 gift cards in a raffle. The team also contacted all seven participating contractors and completed interviews with three.

[13] While this research question was identified in the evaluation plan, no non-lighting measures were ultimately included in the 2023 program.

Table 3-7. Evaluation Activity Summary

Evaluation Activity	Completed
Georgia Power Program Staff Interviews	2
Participating Customer Survey	63
Participating Contractor Interviews	3
Nonparticipant surveys	300
On-site measure verification with participant businesses	83

3.3.2.1 Impact Evaluation Methodology

3.3.2.1.1 Verified Savings

The evaluation team calculated gross verified energy and demand savings based on a random sample of projects from the VisionDSM tracking database. The sampling was split into two cohorts: cohort 1 consisted of 61 projects completed on or before August 30th, 2023, and cohort 2 consisted of 22 projects completed between August 31st and December 31st , 2023, for a total of 83 projects evaluated. Georgia Power's reported savings values for lighting measures were evaluated using the Uniform Methods Project (UMP): Commercial and Industrial Lighting Evaluation Protocol.[14] The UMP provides protocols for determining energy and demand savings that result from energy efficiency measures implemented through state and utility programs. The protocols align with the International Performance Measurement and Verification Protocol (IPMVP)[15] as an industry standard framework for measuring and verifying energy savings. The evaluation team conducted site visits for all sampled projects to verify information such as nameplate data and measure persistence (i.e. whether the unit is currently installed and operable). Where possible, the team installed light loggers to measure lighting HOU and peak CFs. Energy and demand savings were evaluated based on site-specific findings and measurements. More detailed discussion on savings methodology can be found in Section 0 of this report.

3.3.2.1.2 Net-to-Gross Ratios and Net Savings

The evaluation team employed self-report end-user participant surveys and traditional NTG methodology to estimate NTG ratios. Free-riders are defined as participants who would have purchased and installed

[14] More information on the Uniform Methods Project is available at https://www.nrel.gov/ump/about.html.

[15] https://evo-world.org/en/products-services-mainmenu-en/protocols/ipmvp

measures without the support of the program; participant spillover indicates additional unrebated measures that customers installed because of program influence. The equation to calculate NTG savings is as follows:

NTG = 100% – Free-Ridership + Participant Spillover

NTG ratios were used to develop the verified net savings estimates following guidelines in the State and Local Energy Efficiency Action Network's *Program Energy Efficiency Program Impact Evaluation Guide* and the UMP information on net savings.

The concept underlying the self-report surveys is that Georgia Power downstream program commercial customers decide whether or not to participate in DSM programs; therefore, they are in the best position to explain what influenced their decision. The survey was designed to collect information on free-ridership and participant spillover, as further detailed below.

Free-Ridership. To mitigate self-report bias, a battery of free-ridership questions was used to collect data on each participant's *intention*, as well as the program factors that might have had *influence* on the participant's actions. The *intention* and *influence* scores both held a maximum free-ridership value of 50%. The overall free-ridership score for each participant was calculated by summing the *intention* and *influence* scores:

Overall Free-Ridership Score = *Intention* Free-Ridership Score (Maximum 50%) + *Influence* Free-Ridership Score (Maximum 50%)

Participant Spillover. The survey also included questions necessary to calculate participant spillover—the program's influence on customers' decisions to invest in additional energy-efficient measures for which they did not receive any Georgia Power incentives and for which we can provide reasonable documentation of savings.

The NTG methodology is described in greater detail in Appendix C.

3.3.2.2 Process Evaluation Methodology

The evaluation team used a range of methods to perform its process evaluation. The team conducted interviews with Georgia Power staff and FCI staff involved in design, implementation, and outreach of the SCDI program to understand program processes and learn about program status. Interviews took place in March 2023 and sought to assess program operations, performance, marketing strategies, and perceived market barriers and motivations.

To determine program data completeness, conduct the impact evaluation, and assess marketing materials, the team conducted a review of the program database and materials, which included the VisionDSM

program tracking tool, any materials developed to promote the program to contractors, and the implementation manual.

The evaluation team conducted several surveys and interviews with program stakeholders:

- Surveys with participating small commercial customers to capture their experiences with the program and identify challenges with or barriers to implementing energy-efficient products and equipment. The survey was fielded from November 2023 through March 2024 and achieved a 16% response rate.
- Interviews with participating installation contractors in October 2023 to understand their perspectives on the program, assess program processes, and identify areas for improvement. The evaluation team completed an interview with three of seven participating contractors.

3.4 Impact Evaluation Findings

3.4.1 Verified Gross Savings

To determine verified gross program energy savings and demand reduction for the SCDI program, the evaluation team sampled 83 projects. For each project, the evaluation team performed an engineering desk review, developed a M&V plan, performed a site visit to verify measure specifications and installation quality, installed light loggers (where possible) to measure lighting HOU, CF, and calculated verified energy and demand savings. The verified energy and demand savings from the sample were extrapolated to the SCDI program population to determine the program performance.

See Table 3-8 and Table 3-9 below for reported vs. gross verified sample energy and demand savings.

Table 3-8. 2023 Program Reported vs. Gross Verified Sample Energy Savings

Measure Category	Reported kWh	Verified Gross kWh	Realization Rate
LED Exit Sign	3,936	2,482	63.1%
LED Exterior Canopy	1,252	1,480	118.2%
LED Exterior Spot	57,320	4,503	7.9%
LED Exterior Wallpack	11,378	3,612	31.7%
LED Fixture	254,972	189,901	74.9%
LED Highbay	84,370	45,873	54.4%
LED Linear	1,000,190	849,527	84.9%
LED Retrofit Kit	39,254	34,456	87.8%
LED Screw In	104,438	75,993	72.8%
Occupancy Sensor	3,347	1,677	50.1%
TOTAL	**1,560,458**	**1,209,503**	**77.5%**

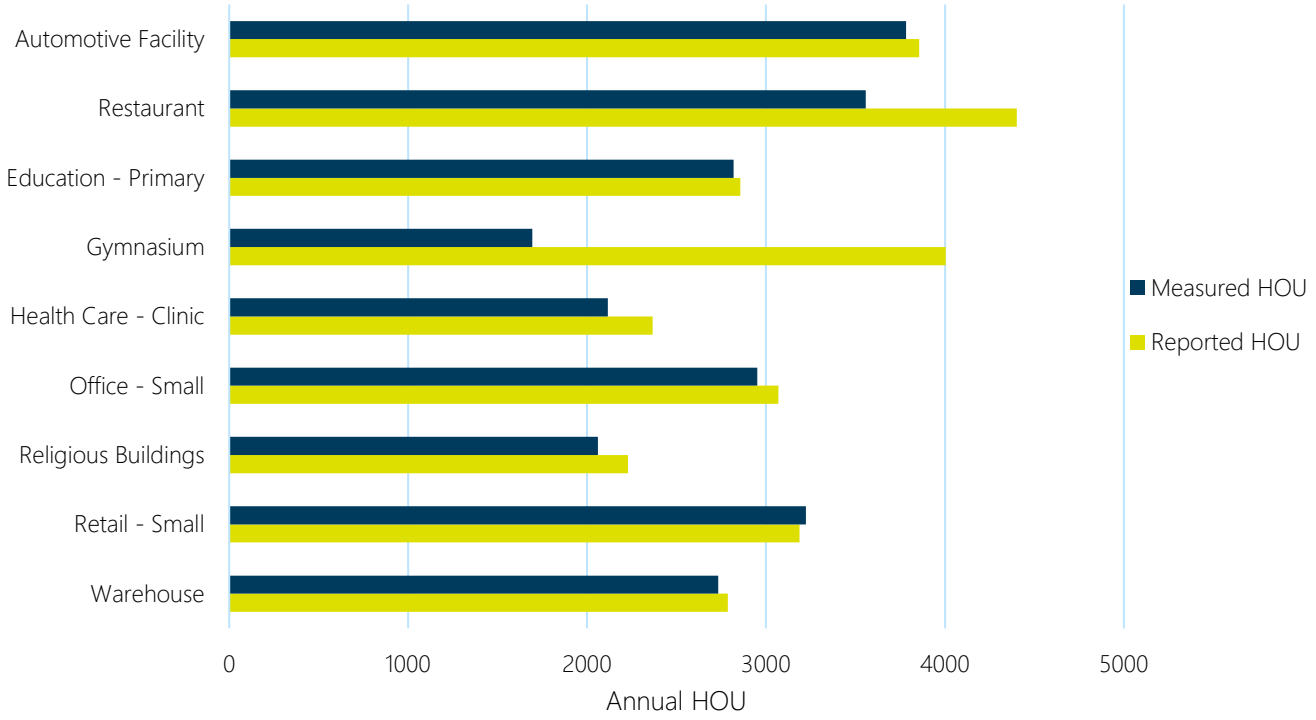
Table 3-9. 2023 Program Reported vs. Gross Verified Sample Demand Savings

Measure Category	Reported kW	Verified Summer Gross kW	Summer kW Realization Rate	Verified Winter Gross kW	Winter kW Realization Rate
LED Exit Sign	0.5	0.2	52.0%	0.1	23.6%
LED Exterior Canopy	0.3	-	0.0%	0.1	41.9%
LED Exterior Spot	13.3	0.1	0.6%	0.5	3.5%
LED Exterior Wallpack	2.7	-	0.0%	0.4	13.0%
LED Fixture	74.5	42.8	57.4%	33.4	44.8%
LED Highbay	30.5	9.2	30.1%	8.1	26.5%
LED Linear	331.3	188.1	56.8%	145.3	43.9%
LED Retrofit Kit	15.0	10.0	66.7%	3.5	23.3%
LED Screw In	35.1	15.9	45.3%	12.0	34.3%
Occupancy Sensor	0.7	0.4	53.4%	0.3	41.6%
TOTAL	**503.9**	**266.6**	**53.2%**	**203.7**	**40.4%**

The evaluation team identified multiple factors impacting program performance including: HOU, CFs, ISRs, IFs, baseline lighting wattage, and incentivized lighting wattage.

FCI determined HOU by space type during each project's initial assessment. Hours of use were reported based on discussions with the facility contact and space observations. The evaluation team installed 153 light loggers in representative spaces at 69 facilities to evaluate HOU and CFs for incentivized lighting measures. As shown in Figure 3-2, the evaluation team measured the average HOU to be within 10% of reported HOU for 6 of the 9 building types. The largest discrepancies in HOU were found with Gymnasiums, Restaurants, and Healthcare Clinics. In total, the measured HOU accounted for approximately 6% reduction in realized energy savings.

Figure 3-2. Average Sample Reported vs. Measured Hours of Use



Coincidence factors, representing the percentage of maximum energy use during the summer peak period, were reported as 1.0 within the savings tracking system. The evaluation team relied on light logger analysis to measure the CF at sampled projects. Logger data were collected for 69 of the 83 sampled projects (83%). As shown in Table 3-10, the team found the summer CF to be an average of 48% lower than reported and the average winter CF to be 57% lower than reported. For measures that did not have available logger data, the evaluation team assumed summer CF values based on the project's building type and a single winter CF value based on the average of all logger findings. These differences in CF account for the greatest impact to low demand savings RRs.

Table 3-10. Sample Reported and Measured Summer and Winter Coincidence Factor

Measure Category	Reported Summer CF	Measured Summer CF	Measured Winter CF
Office - Small	1.00	0.49	0.47
Warehouse	1.00	0.47	0.49
Retail - Small	1.00	0.62	0.42
Healthcare - Clinic	1.00	0.42	0.32
Religious Buildings	1.00	0.32	0.38
Automotive Facility	1.00	0.60	0.28
Education - Primary	1.00	0.51	0.32
Dining: Family	1.00	0.69	0.32
Gymnasium	1.00	0.68	0.13

The evaluation team found the ISR representing the percentage of incentivized measures in operation, to be lower than 100% for several lighting measure categories in Table 3-11. The largest discrepancy in measure counts occurred with exterior spot, exterior wallpack, and LED exit signs. The majority (77%) of missing fixtures were due to clerical errors. The evaluation team found the measure counts in the tracking database were based on the initial site assessment and did not reflect the final work order. The evaluation team found a total of 11,996 individual bulbs and fixtures among the 80 sampled sites. This is 436 measures fewer (or 3.5% less, with respect to reported values) than the reported 12,432 measures for those same sampled sites which yields a 96.5% ISR. The differences in reported and verified measures and the associated ISR is shown in Table 3-11.

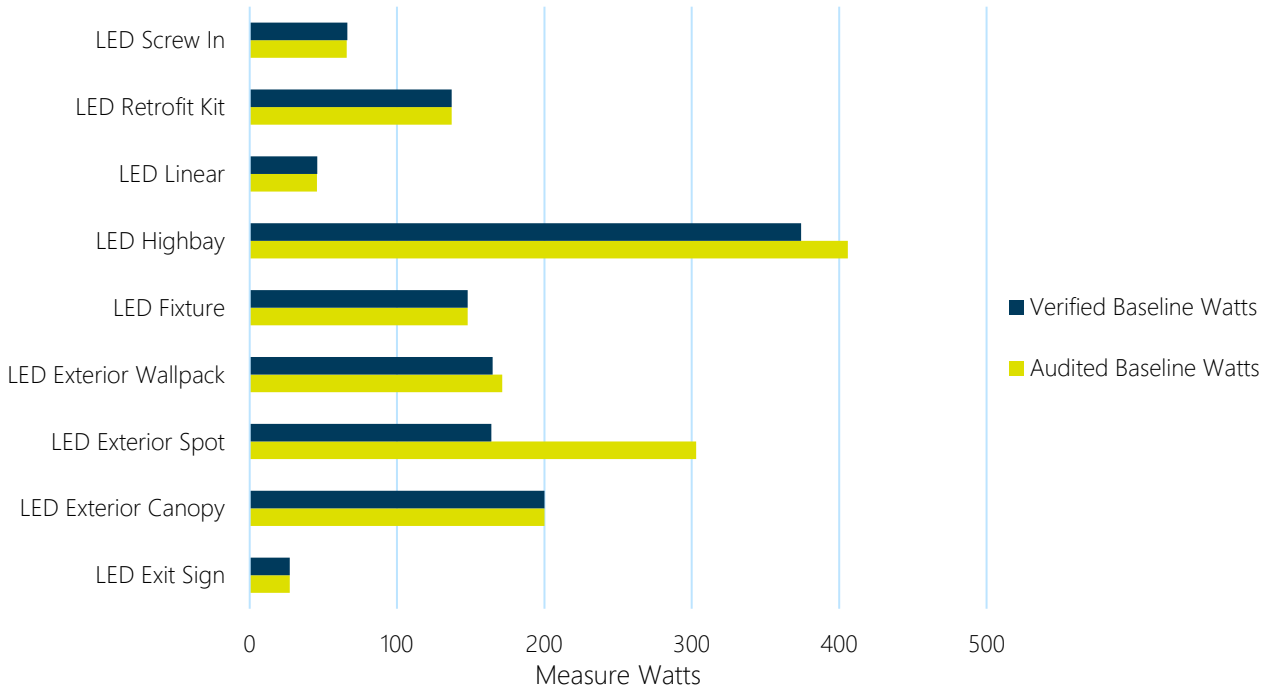
Table 3-11. Sample Reported vs. Sample Verified Quantities

Measure Category	Reported Measures	Verified Measures	ISR
LED Exit Sign	21	12	57.1%
LED Exterior Canopy	2	2	100.0%
LED Exterior Spot	45	12	26.7%
LED Exterior Wallpack	18	7	38.9%
LED Fixture	619	614	99.2%
LED Highbay	105	82	78.1%
LED Linear	10,865	10,562	97.2%
LED Retrofit Kit	114	114	100.0%
LED Screw In	604	552	91.4%
Occupancy Sensors	39	39	100.0%
TOTAL	**12,432**	**11,996**	**96.5%**

Efficient, or proposed, wattages and fixtures observed on-site agreed with reported data for the majority of sampled measures (Figure 3-3). Verified efficient wattages and bulb types agreed with reported data for 336 of 341 sampled measures (99%). The evaluation team adjusted baseline wattages for 5% of sampled measures through desk reviews; baseline wattages for these measures were compared to similar measures within the reported dataset, considered to be inaccurate, and changed to typical values. The evaluation team did not collect baseline conditions, because pre-inspections were not performed. Some example baseline wattage updates can be found below:

- Project No. GPDIPS1553309846 – A quantity of four flood lights were replaced with 70W LED equivalents. A baseline wattage of 600W/lamp was found within the reported dataset and adjusted to approximately 200W.
- Project No. GPDIPS1549017681 – A quantity of two flood lights were replaced with 30W LED equivalents. A baseline wattage of 876W/lamp was found within the reported dataset and adjusted to 114W.

Figure 3-3. Average Verified vs. Average Audited Baseline Wattages



Interactive factors, representing a portion of energy used by HVAC systems to condition building spaces served by lighting, were reported as 7.4% by Georgia Power for all projects. The evaluation team assigned an IF based on the project's building type and primary HVAC system space. As a result, the average IF for energy was found to be 3.8% across sampled projects. The average IF for demand was found to be 14.8% across sampled projects. These factors result in greater demand savings than reported and lower energy savings than reported.

Demand savings were reported for bulbs and fixtures installed in all outdoor applications. Because outdoor fixtures/bulbs are in unconditioned space and assumed to be operating at night, the evaluation team used a value of 0 for verified IF and CF terms for all observed outdoor bulbs or fixtures. This resulted in no demand savings for verified outdoor bulbs and fixtures. This also helps to explain some of the discrepancies observed between reported and gross verified savings. For reference, 37 measures, or 101 individual bulbs or fixtures, were observed to be installed outdoors within the sample.

3.4.2 Net-to-Gross

To estimate free-ridership and participant spillover for the SCDI program (Table 3-12), the evaluation team performed surveys with 51 participants[16] and used the self-report methodology discussed in *Section 3.3.2.1.2* and described in greater detail in Appendix C.2. The program NTG is summarized in Table 3-12.

Table 3-12. 2023 SCDI Program Net-to-Gross

Responses	Estimated Free-ridership	Estimated Participant Spillover	NTG Ratio
51	4.1%	0.0%	95.9%

3.4.2.1 Free-ridership

The team calculated the final free-ridership value for the programs as the sum of the verified gross savings weighted intention (with a maximum score 50%) and verified gross savings weighted influence (with a maximum score 50%) free-ridership components, which resulted in a value between 0% and 100%, as shown in the following equation:

Final Free-Ridership Value = Intention Score + Influence Score

The *influence* and *intention* scores contribute equally to the final free-ridership score. The higher the free-ridership score, the greater the deduction from gross savings estimates.

Table 3-13 summarizes the *intention*, *influence*, and free-ridership scores for the SCDI program. These findings are described in greater detail in Appendix C.2.

Table 3-13. 2023 SCDI Program Final Free-ridership Score

n	Intention Score	Influence Score	Free-ridership Score (Intention Score + Influence Score)
51	2.7%	1.4%	4.1%

3.4.2.2 Participant Spillover

None of the surveyed participants reported that, after participating in the program, they had installed additional Georgia Power program eligible equipment for which they did not receive an incentive and that participation in the SCDI program was important in their decision. Therefore, no spillover is attributed to the program.

[16] 51 participants answered the NTG questions.

3.4.2.3 Net Savings

The NTG ratio is applied to the verified gross savings to determine the verified net savings. Table 3-14 summarizes the application of the NTG ratio to the gross verified energy and demand savings.

Table 3-14. 2023 SCDI Net Verified Impact Results

	Verified Gross Savings	NTG Ratio	Verified Net Savings
Energy (kWh)	10,333,776	95.9%	9,910,091
Summer Demand (kW)	1,654		1,586

3.4.2.4 Results Benchmarking

To provide context for and a check against the results of the surveyed participants, the evaluation team researched small commercial direct install program evaluation reports for which a NTG analysis was conducted. Table 3-15 summarizes the most comparable data found by the evaluation team for the SCDI program.

Table 3-15. SCDI Program Net-to-Gross Benchmarking Table

Utility	Evaluation Year	Free-ridership	Participant Spillover	NTG	Notes
Georgia Power	2023	4.1%	0.0%	95.9%	Self-report with end-user participants
Georgia Power	2021	10.5%	0.0%	89.5%	Self-report with end-user participants
Midwest Utility	2023	5.0%	0.0%	95.0%	Self-report with end-user participants
AES Indiana	2021	18.0%	0.0%	82.0%	Self-report with end-user participants
AES Indiana	2020	13.0%	10.0%	97.0%	Self-report with end-user participants

3.5 Process Evaluation Findings

To gain insight into Georgia Power's SCDI program, the evaluation team conducted participant surveys via phone and online. The survey results provided a detailed look into factors including customer awareness, customer satisfaction, and general program experience.

3.5.1 Participant Surveys

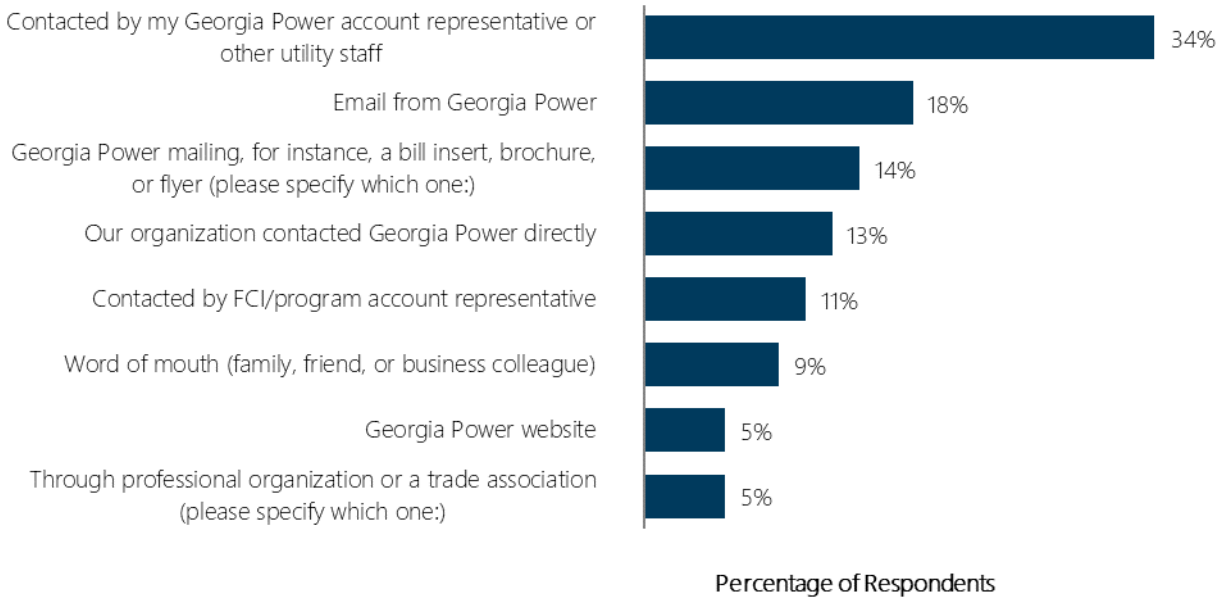
The evaluation team assessed the feedback from 63 of the 382 program participants who completed a survey. Respondents shared feedback on how they became aware of the program and their experiences

with the assessment and installation process. Several respondents offered recommendations to help improve the program.

3.5.1.1 Participant Awareness

Respondents most commonly said they learned about the SCDI program through their Georgia Power account representative or other staff (34%), followed by an email from Georgia Power (18%), or a Georgia Power mailing such as a bill insert, brochure, or flyer (14%). Figure 3-4 shows all sources of program awareness.

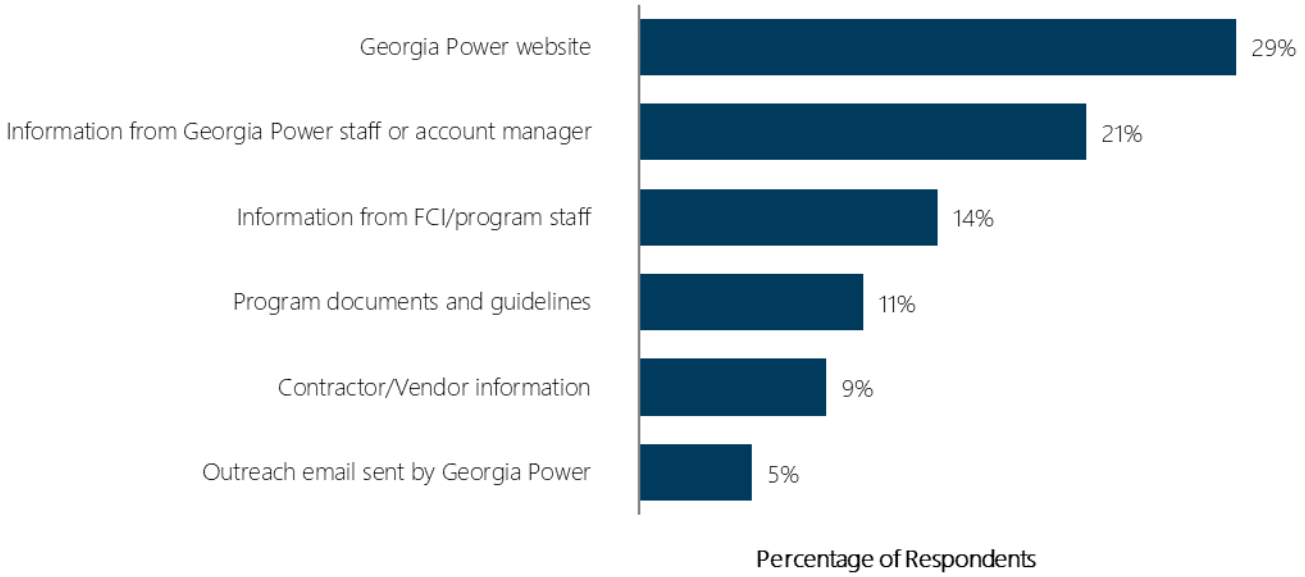
Figure 3-4. SCDI Program Participant Awareness



Source: Participant Survey. Question Q1. "How did your organization first learn about Georgia Power's Small Commercial Direct Install Program?" n= 56. Multiple responses allowed.

Direct, door-to-door outreach and email communication were key outreach strategies for FCI. As shown in Figure 3-5, respondents most commonly reported using the Georgia Power website (29%), information from Georgia Power staff (21%), or information from FCI/program staff (14%) to inform their decision to participate in the program (n=56).

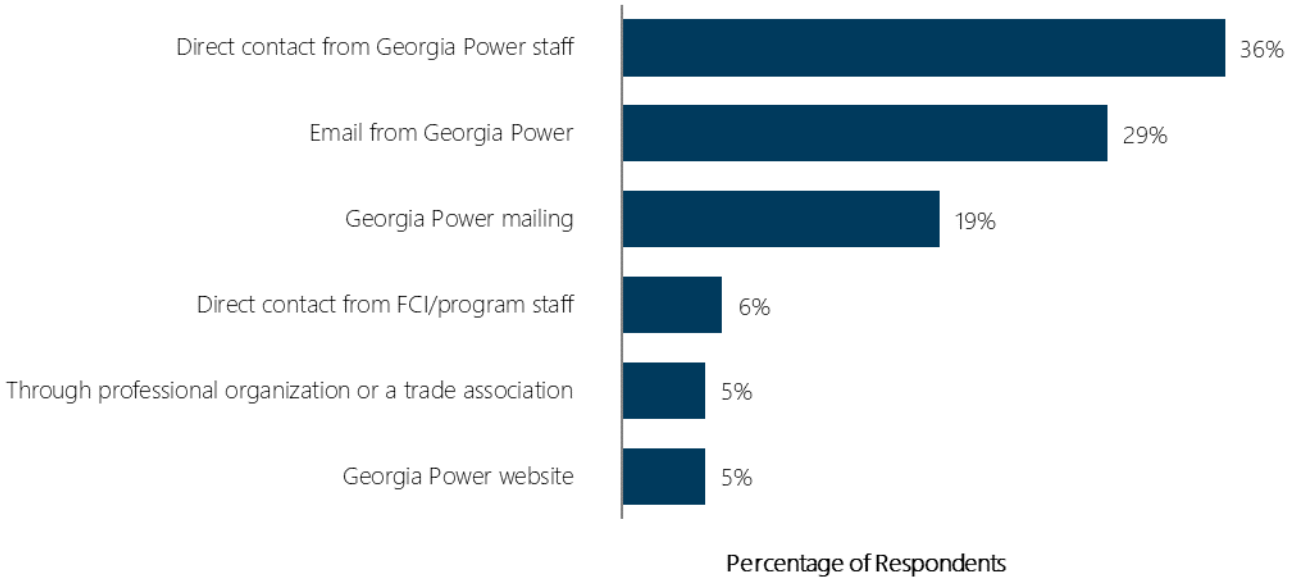
Figure 3-5. SCDI Program Participant Information Sources



Source : Participant Survey. Question Q2. "What sources of information did you review to learn about the program before you decided to participate?" n= 56.

To understand preferred methods of reaching small commercial business decision makers, the evaluation team asked respondents how Georgia Power could best inform businesses about rebates for energy-efficient improvements. The majority of respondents (36%) preferred direct contact from Georgia Power staff, followed by emails from Georgia Power (29%). All methods mentioned are shown below in Figure 3-6.

Figure 3-6. SCDI Program Participant Preferred Method of Communication for Rebate Information

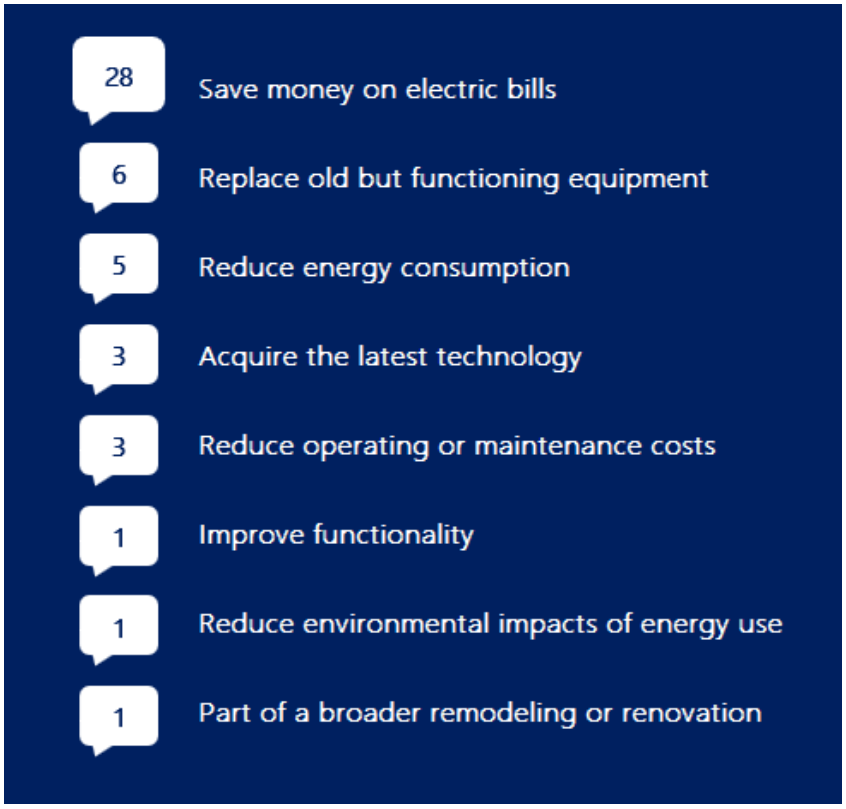


Source : Participant Survey. Question Q5. "What's the best way for Georgia Power to inform businesses like yours about their rebates for energy-efficient improvements?" n= 56. Multiple responses allowed.

3.5.1.2 Motivations and Attitudes

Survey respondents identified the most important factors in their decision to participate in Georgia Power's Small Commercial Direct Install Program, as shown in Figure 3-7. Similar to results from the previous evaluation, saving money on electric bills was one the most important factors in respondents' decision to participate in the program (28 of 53 respondents; 53%).

Figure 3-7. SCDI Program Participation Decision-Making Factors



Source : Participant Survey. Question Q26. "What was the most important factor in your decision to participate in Georgia Power's Small Commercial Direct Install Program?" n= 53. Multiple responses allowed.

When asked about the economic impacts of Georgia Power's program (beyond rebates), 35% of respondents said that the program lowered their organization's operating or maintenance costs. Twenty-nine percent of respondents shared that the program increased their awareness of energy saving opportunities (n=52).

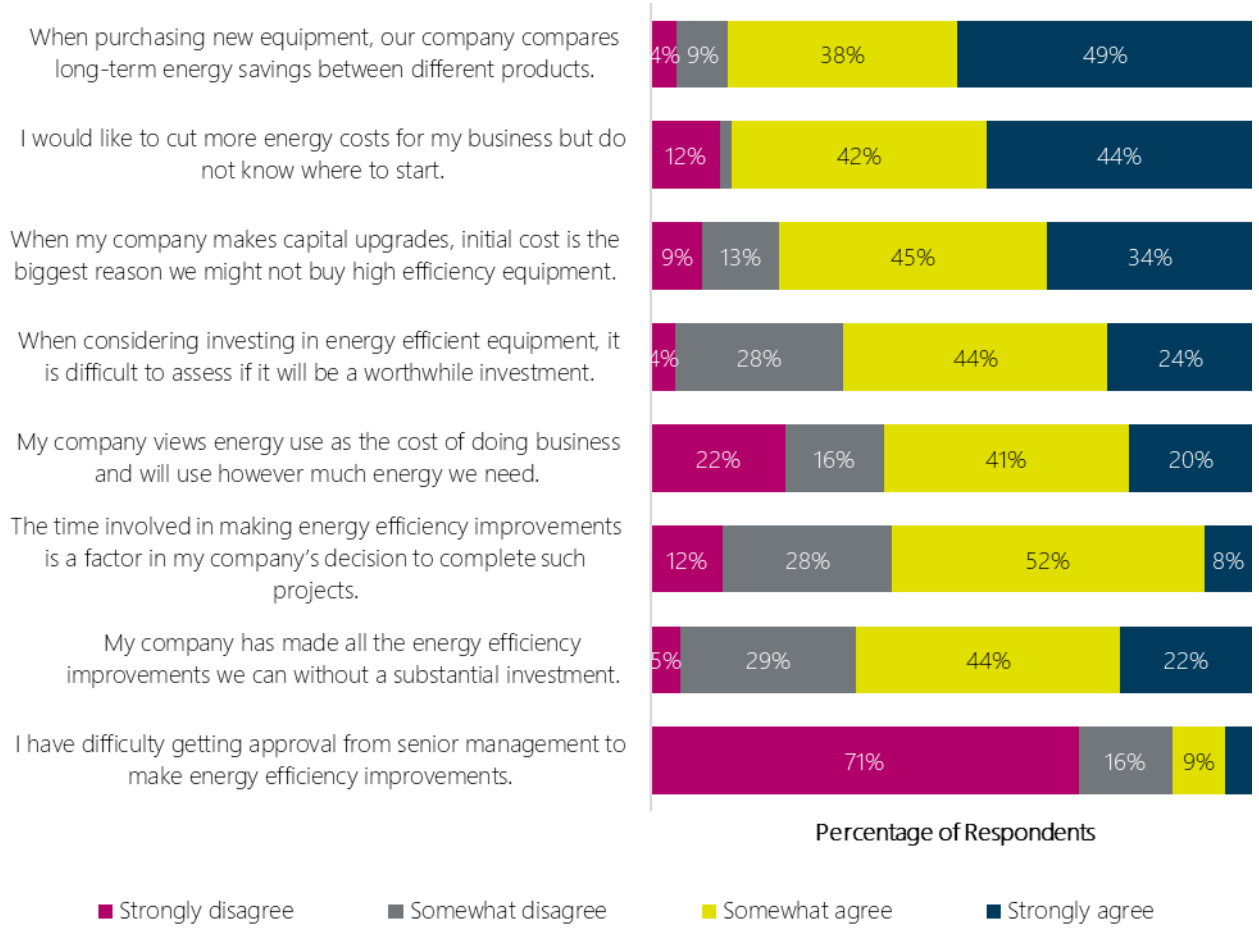
Forty of the 52 SCDI participant respondents installed new equipment to replace equipment that was still working, signifying a large portion of early replacements within this program. This continues the trend first observed in the 2020-2022 evaluation.

Nearly one-third of survey respondents identified having social and environmental sustainability goals, and said that their program participation supported these goals in several ways (n=41):

- Increasing awareness of energy-efficient opportunities (eight respondents).
- Saving energy costs helps everyone in many ways (two respondents).

Respondents provided their agreement level with several statements about energy efficiency in their businesses. As shown in Figure 3-8, cost and energy savings were considered most significant for many customers. The majority (87%) agreed that "when purchasing new equipment, our company compares the long-term energy saving between products", followed by 86% of respondents who said they *strongly agree* or *somewhat agree* with the statement, "I would like to cut more energy costs for my business but do not know where to start." Over three-quarters (79%) of respondents said that initial cost was a primary consideration when making capital upgrades. Over half *(*66%) of the respondents indicated that their company has "made all the energy efficiency improvements they can without a substantial investment" and "when considering investing in energy-efficient equipment, it is difficult to assess whether it will be a worthwhile investment." Fewer respondents indicated that senior management was a barrier to installing energy-efficient equipment with only 6 of the 45 respondents saying they *strongly agree* or *somewhat agree* with the statement.

Figure 3-8. Attitudes Toward Energy-Efficient Projects



Source: Participant Survey. Question Q25. "For each of the next statements, please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree." n=41-52.

3.5.1.3 Program Experience

To identify opportunities for installing program-qualified measures, the program implementer, FCI, conducted on-site assessments and provided each business with an assessment report. Nearly three-quarters (73%) of respondents recalled receiving an assessment from a program representative before implementing the energy-efficient project. Of those 41 respondents, 73% (30 respondents) recalled receiving a report that presented energy-efficient opportunities and improvement recommendations for their business, and all 30 of those respondents reported that a program representative contacted them to answer questions about the assessment or communicate next steps for participating in the program.

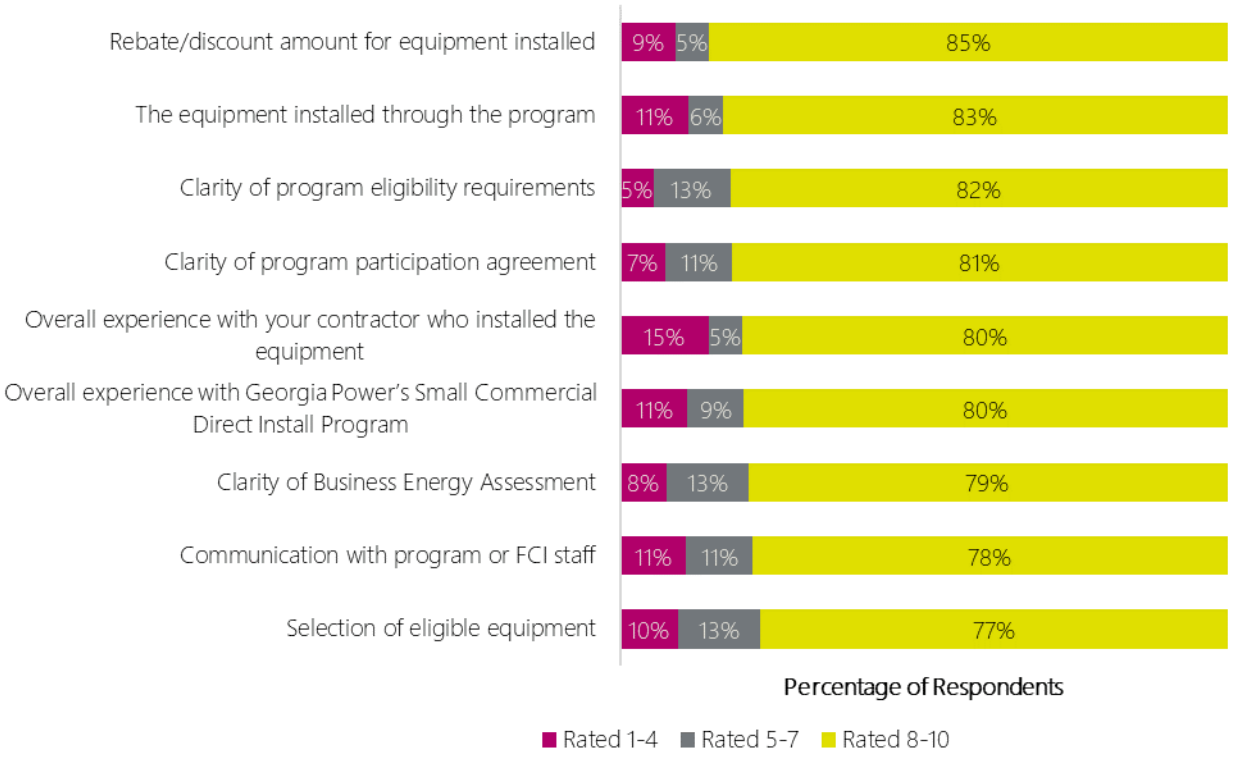
Over half (21) of the 30 respondents who recalled receiving the assessment indicated that the assessment process was *very important* in helping them decide to install energy-efficient equipment through Georgia Power's SCDI program, and six rated the importance of the assessment process as *somewhat important*.

Nearly half (46%) of respondents installed all of the recommended improvements, and 40% of respondents installed some of the recommended improvements. Three respondents who did not install all of the recommended improvements said that financial constraints prevented them from doing so. This was similar to respondents' answers when asked about the most significant challenges to installing energy-efficient equipment at their respective companies. Nearly three-quarters (71%) cited budget limitations and 27% mentioned the high initial cost. Of the remaining 12 respondents, two faced time constraints, two were not sure how to proceed with recommendations, and two changed the scope of their project work based on new recommendations. The evaluation team also asked whether respondents were interested in but did not install additional energy-efficient equipment because the rebate was insufficient or unavailable through Georgia Power's commercial programs, beyond the SCDI program. Seven people said they had additional project ideas they had not pursued: four of the seven identified HVAC equipment; three mentioned additional lighting equipment; and one also mentioned solar panels.

3.5.1.4 Participant Satisfaction

Participants expressed high levels of satisfaction with many program elements. Program participants ranked their satisfaction with several aspects on a scale of 1 to 10, with 1 being extremely dissatisfied and 10 being extremely satisfied (Figure 3-9). The three factors with the highest satisfaction ratings were the discount amount for the equipment installed, the equipment installed through the program, and the clarity of the program eligibility requirements. Eighty percent of respondents gave high satisfaction ratings (9 or 10 rating) for their overall program experience.

Figure 3-9. SCDI Program Participant Satisfaction



Source: Participant Survey. Question Q16. I would like to know your level of satisfaction with different aspects of the Georgia Power Small Commercial Direct Install Program. Please rate your level of satisfaction with the following using a 1 to 10 scale where 1 is "extremely dissatisfied" and 10 is "extremely satisfied." n=52-55.

When asked for reasons behind their ratings respondents said:

"Quality of the work and the people doing the installation."

"Good contractors."

"Polite and professional."

"Clear information for qualifications, quick assessment and price quotes once the building was inspected."

"Georgia Power Rep, very professional."

"Prompt service."

"Better lighting and savings."

"Felt unclear what exactly they would do and not do."

"Georgia Power Rep [name] was very professional, but the electrician services were slightly dissatisfying as they didn't correctly install switches or explain the need for new covers, and they never returned for an estimate to install new fixtures. Despite a call to remind/ask them to do so."

"Initial count of fixtures was incorrect. That resulted in the replacement activity taking over two months."

"The lights that we had before they were replaced were 100% better than what was installed by this program. We have had the installing contractor back out to fix the problem and they tell us it is electrical. We never had problems before..."

The largest percentage of respondents indicating a rating below four was for the overall experience with the contractor. When asked what factors most influenced their overall rating of the program, two respondents who rated their overall experience with the SCDI program below a 4 out of 10 said the following:

"Did not install the correct product. Half of the product did not work after two months, and we cannot get anyone to repair them. They left all the trash from the install, and we cannot get anyone to collect it after multiple attempts."

"Terrible communication switched proposal."

"Zero follow up after the product was installed."

In an interview, FCI staff mentioned being aware of communication challenges between the assessor and the contractors. FCI noted they considered training the assessors to be more accurate when creating the work

order to mitigate miscommunication between the contractors and assessors, but due to staff shortages this has not taken place.

Respondents were asked about their overall satisfaction with Georgia Power. Eighty-seven percent of respondents rated their utility service experience as a 7 or higher with 73% rating their experience as a 9 or 10 (n=55). Fifty-eight percent of respondents said they were more satisfied with Georgia Power as their energy provider after participating and 33% said they were just as satisfied (n=55). When respondents who rated their overall utility experience with Georgia Power as a 6 or below were asked about their rating, two respondents said the following:

> "As I stated in my previous comment, we cannot use our office lights. We have had to purchase lamps and desk lights in order to be able to see without becoming nauseous from the flickering lights."
>
> "Zero follow up after the product was installed."

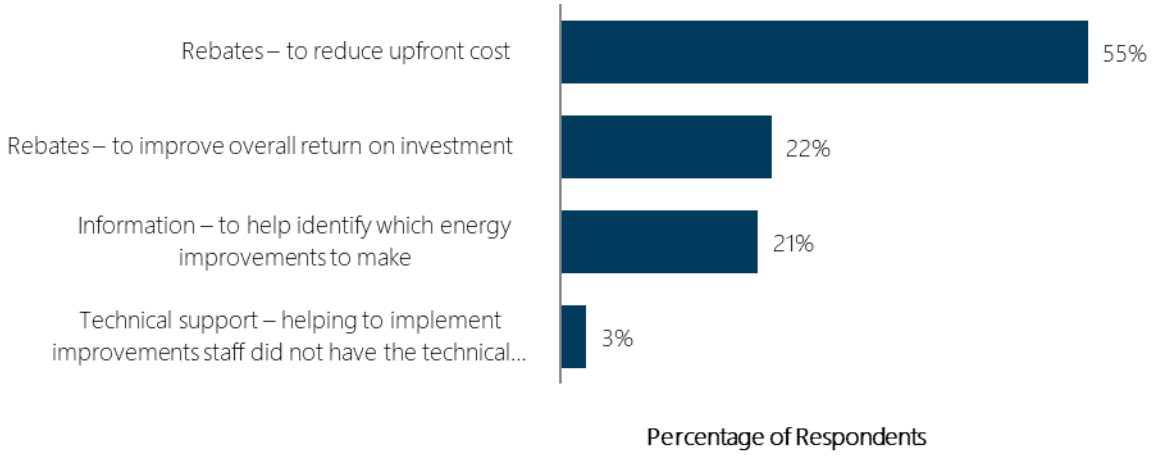
3.5.1.5 Energy Efficiency Opinions and Practices

Respondents shared feedback about the barriers to installing energy-efficient equipment at their participating companies. Budget limitations, high initial cost or a lack of understanding of energy-efficient equipment eligible for rebates were the primary concerns for all survey respondents, (48 responses total, multiple responses allowed). The following were also mentioned by four to eight respondents each:

- Does not own building/short-term lease (8 respondents).
- Lack of staff time to dedicate to pursuing energy-efficient upgrades (5 respondents).
- Lack of technical knowledge about energy-efficient equipment (4 respondents).

Respondents also identified the specific components of the program that were most important in combatting the challenges they cited (Figure 3-10). Rebates for reducing the up-front cost and improving the return on investment were the two most common benefits of the SCDI program.

Figure 3-10. Valuable Aspects of SCDI Program



Source: Participant Survey. Question Q72. "What aspects of Georgia Power's program were most valuable to your organization in addressing these challenges and implementing energy efficiency improvements?" n=46. Multiple responses allowed.

3.5.2 Contractor Interviews

The evaluation team conducted interviews with three of the seven participating installation contractors, who provided their perspectives on the program processes, satisfaction, and areas for improvement and opportunities.

3.5.2.1 Contractor Awareness

The direct install component of SCDI has been in place since 2017. However, the contractors who participated in the interviews were relatively new to the program. Two of the three respondents began participating in 2022, and one respondent joined in 2023. None of the three contractors interviewed for the prior evaluation were participating contractors in this cycle.

Table 3-16 shows respondents' history with the program and how they were introduced to the program.

Table 3-16. Contractors' History with and Introduction to the SCDI Program

		Respondent 1	Respondent 2	Respondent 3
	History with program	Participating since early 2022	Participating since 2023	Participating since 2022
	Introduction to program	A former FCI staff member reached out via LinkedIn	First heard about program through their current employer and a partner they work with	Had been working as a subcontractor with another company that did work in other states

Source: Contractor Interviews. Questions Q1 and Q2. "When did you first enroll in the Georgia Power Small Commercial Direct Install Program" and "How did your organization first learn about Georgia Power's Small Commercial Direct Install Program?" n=3.

The SCDI program offered contractors more work opportunities and the ability to provide better services to their customers. Two of the three respondents identified the increased product, service sales, and/or financial benefits as their primary motivation for participating in the program. One respondent was largely motivated by helping customers save money on their electricity bill. Although their overall view of the program was positive, all three respondents mentioned that the work order process had not gone as smoothly as they had expected. See next section for more details on issues encountered with work orders.

Table 3-17 summarizes respondents' primary motivation for participating in the program and how well it met their expectations.

Table 3-17. Contractors' Participation Motivations for and Expectations with the SCDI Program

		Respondent 1	Respondent 2	Respondent 3
	Primary motivation to participate	Increased product/service sales/ financial benefits	Increased product/service sales/financial benefits	Help customers save on their electricity bill
	Meeting expectations	Aligning their business with the program has been good but customers have expressed dissatisfaction with the assessment process due to inaccurate counts/number of available jobs	Aligning the business with the program has been good but there have been issues with the assessment process due to inaccurate descriptions of needed supplies/counts	Aligning their business with the program has been good, but the sales/assessment training could be improved to maximize offerings to customers

Source: Contractor Interviews. Questions Q3 and Q4. "What would you say was your company's primary motivation for participating in the SCDI program?" and "Has the program met your expectations, in regards to…[response from Q3]?" n=3.

3.5.2.2 Work Order Process

Contractors found the work order and the reimbursement processes easy, however, the work orders that resulted from the assessments were often missing crucial details. This impacted contractors' profitability and

ability to complete the jobs, lessening their satisfaction with the process (Table 3-18). All three respondents described the work order process as easy. These three respondents also mentioned the same issue with the work orders they received—that the assessors did not document or provide accurate details about the installation site description. All three contractors mentioned incorrect contact information being listed on the work orders.

Two of the three contractors specifically cited that the counts of the equipment in need of replacement were not accurate; typically, the work orders underestimated equipment counts or listed the wrong equipment. For these two contractors, when rating components of the SCDI program, they rated the clarity of the customer's site installation information lower than other aspects of the program. The third contractor flagged equipment compatibility issues, such as the lighting on the assessment not matching what the facility required or the lighting not working correctly.

One contractor who faced challenges with the work order process reported that since there was a staff change at FCI in 2023, they are no longer receiving the same volume of work because "the audits are chaotic…customers get upset, we can only do what is in the work order." This contractor mentioned that they had participated in the program before and had received more jobs from the previous assessor they worked with. They also said that the work order process did not fully capture what customers wanted and expected.

The same contractor also commented about the installation process, saying that there were instances where the work order did not list the installation equipment needed to complete the projects, like certain types of lifts to access lighting. Additionally, in instances where the reported equipment counts were undercounted for the facility, two contractors cited a need to purchase additional equipment and then attempt to receive payment on supplemental equipment they had to purchase. One contractor said the need to seek payment on supplemental equipment consequently cuts into their profitability. As a result, they proposed conducting both the installation *and* assessment processes themselves when applicable. This contractor also raised issues with the reimbursement process, reporting that payments were late or missed. Sometimes they experienced confusion surrounding what services they would be compensated for, noting cases where they would "not get paid if the customer didn't pay for something."

When asked how FCI or Georgia Power could resolve these issues, all three respondents suggested that the assessments need to provide more accurate descriptions of the installation site specifically with the equipment counts and contact information of site hosts. Furthermore, one contractor suggested auditors add more in-depth details about the facility such as ceiling heights or any potential issues they may encounter when installing equipment in the facility. They emphasized that adding as much information as possible would be helpful. Regarding the reimbursement process, one contractor mentioned ensuring that the invoices are both paid and paid in a timely manner. They also proposed discussing problems beforehand rather than not receiving full payments for equipment/labor they had to purchase to complete jobs to customer expectations.

Table 3-18. Contractors' Experience with the Application Process

		Respondent 1	Respondent 2	Respondent 3
	Work order process	Very Easy	Very Easy	Very Easy
	Issues with work orders	The counts are off or the phone numbers listed in the work orders are wrong	There have been issues with the counts or incorrect contact information	Issues with compatibility such as bulbs not matching or working correctly, as well as invalid phone number or incorrect contact at the company
	Reimbursement process	Very easy	Very easy	Very easy
	Issues with reimbursements	Payments are late or not received or contractors are short paid. The latter is partly due to confusion as to what contractors get paid for (e.g., situations where customers did not pay for something)	None at all	Ensuring that contractor receive approval for extra equipment up front, so they are reimbursed for both equipment and labor

Source: Contractor Interviews. Questions Q9-10 and Q13-14. "How would you describe the work order/reimbursement process?" and "Have you ever encountered an issue with a work order/reimbursement?" n=3.

3.5.2.3 Market Opportunities

When asked about market opportunities for the SCDI program, contractors identified adding other lighting products, EV chargers, water, and space heating. As shown in Table 3-19, all three respondents suggested that the program consider new lighting products such as flood lights, hybrid bulbs, and combo units to increase energy savings.

To increase the adoption of energy-efficient equipment, two of the three contractors provided sales-related recommendations. One contractor suggested assessors be equipped with the knowledge needed to educate customers, particularly surrounding inflation's impact on the sales of energy-efficient equipment. The second contractor similarly called for enhancing the training experience for salespeople. This contractor even mentioned that they would be eager to spend a day with salespeople, sharing their own experience as an electrician for 20 years. They also proposed that the program join local trade groups, or business clubs to promote and increase program awareness. The other contractor recommended expanding the program's product offerings to include EV chargers, solar panels, and other lighting controls.

Table 3-19. Contractors' Program Recommendations

		Respondent 1	Respondent 2	Respondent 3
	Other products and ideas for program to consider	• Sensors were recently added, so no suggestions at the moment	• Emergency lights • EV chargers • Solar panels • Other lighting controls	• Water heating (e.g., timers) • Space heating
	Other changes for Georgia Power to implement	Train salespeople to educate customers	Expand product offerings	Increase knowledge of the program and network the program (e.g., through HOAs, local trade groups, or business clubs)

Source: Contractor Interviews. Questions Q16 and Q17. "Is there additional commercial electric, energy-efficient equipment that you would be willing to install through this process that you think Georgia Power should consider adding?" and "How else could the SCDI Program increase the adoption of additional energy efficiency measures among small commercial customers?" n= 3.

3.5.2.4 Satisfaction and Overall Program Experience

The SCDI program received mixed satisfaction results from contractors, as shown in Table 3-20. All three respondents were satisfied with the overall program experience, providing a 7 or higher rating on a 1 to 10 scale with 1 being *extremely dissatisfied* and 10 being *extremely satisfied*.

The program aspect of *obtaining equipment for each project* received the highest satisfaction ratings among two respondents. Two respondents gave the lowest satisfaction ratings for *the clarity of the customer's site installation information*, while the third respondent gave the lowest satisfaction rating for *the program's quality control or project verification process*.

The low satisfaction ratings for *the clarity of the customer's site installation information* had to do with the assessments and work orders. As mentioned earlier, all three respondents were dissatisfied with the lack of details and accuracy from the assessors about the installation site description. One respondent said that they worked with FCI to resolve this issue, reaching out to get things approved and fixed to finish the project.

Table 3-20. Contractors' Satisfaction with the SCDI Program

Response	Respondent 1	Respondent 2	Respondent 3
Working with FCI staff within the SCDI program	7	10	10
Work order process	5	10	8
Reimbursement process	8	7	Don't know
Process of obtaining equipment for each project	7	10	9
Customer awareness of the process when you arrive on installation day	7	10	7
Program's quality control or project verification process	Don't know	10	5
Clarity of the customer's site installation information	5	8	8
Your overall experience with the SCDI program	7	10	9

Source: Contractor Interviews. Question Q18. *"Please tell me how satisfied you are with each of the following aspects of the program*. Please rate your level of satisfaction with the following using a 1 to 10 scale where 1 is "extremely dissatisfied" and 10 is "extremely satisfied" n=3.

3.6 Conclusions and Recommendations

Conclusion 10: Challenges identified in the 2020-2022 evaluation around a lack of accuracy in the work orders and incomplete communication from assessors to contractors persisted in 2023, causing contractors loss of profitability and inability to complete jobs as customers expected. Furthermore, these discrepancies affected the evaluated savings because the work orders and quantity of bulbs observed on site led to a reduction in evaluated savings.

Interviews with contractors and participant customer surveys showed both groups were satisfied with the program overall. All three contractors said the work order and reimbursement processes were easy, and 80% of customers expressed satisfaction with the program overall. However, as in the previous evaluation, the evaluation team found that inaccuracies with equipment counts and types and contact information on the work orders lessened the satisfaction of both contractors and customers. Contractors said that when they were unable to complete the job as planned due to incorrect work orders, it impacted their profitability and their relationships with customers. In the interview with the evaluation team, the implementation contractor, FCI, said it meets regularly with each contractor to collect feedback.

A driver of discrepancies between reported and gross verified savings is the quantity of bulbs observed on-site versus that within the reported data. During desk reviews of sampled projects, the evaluation team was unable to match reported savings to project documentation savings. The majority (77%) of missing fixtures were due to clerical errors. The evaluation team found the measure counts in the tracking database were based on the initial site assessment and did not reflect the final work order. The evaluation team found a

total of 11,950 bulbs among the 80 sampled sites. This is 482 bulbs fewer (or 4% less, with respect to reported values) than the reported 12,432 bulbs for those same sampled sites which yields a 96% ISR.

> Recommendation 10: Assessors should receive more site-specific coaching from FCI to ensure that the assessment documents recommend the proper upgrades and reflect the necessary details about the site—including correct contact information and equipment necessary to perform the installations—in order to facilitate a smooth installation process. In addition, it is recommended that the assessment report be updated to reflect the installed outcomes.

Conclusion 11: When participants were able to complete their projects as planned, they expressed high levels of satisfaction with the program, driven by the cost-sharing, the equipment, the clarity of the eligibility requirements/participation agreement and the experience with the installation contractors.

Most participating businesses (average of 81%) gave ratings of 8-10 when asked about their satisfaction of different program aspects. Altogether, when participants received their expected equipment as outlined by the audit and the program, they were satisfied with most other aspects of the program and the program design. When jobs were not completed as expected, participant satisfaction was lower, with customers citing issues with missing new equipment and a lack of communication from program staff to discuss issues participants encountered.

> Recommendation 11: Consider allowing contractors to perform the assessments themselves. This could create a more streamlined customer experience and enhance the engagement and investment in positive customer outcomes from contractors.

Conclusion 12: About half of participants are installing recommended improvements, but cost is limiting the ability of others to follow through on assessment recommendations.

Nearly half (46%) of respondents installed all of the recommended improvements, and 40% of respondents installed some of the recommended improvements. Three respondents who did not install all the recommended improvements said that financial constraints prevented them from doing so, and budget limitations was a frequently cited limiter of energy-efficient projects.

> Recommendation 12: Explore whether the program can offer a multi-stage installation process for customers with limited budgets, and institute a follow-up process in subsequent years for customers who only complete a portion of the installations.

Conclusion 13: Interactive factors contributed to lower realized energy savings and higher realized demand savings than reported.

Interactive factors were reported as 7.4% by Georgia Power for all projects. The evaluation team assigned an IF based on the project's building type and primary HVAC system space. The evaluation team found the average IF of sampled projects was lower than reported (3.8% vs 7.4%) for energy savings and higher than

reported (14.8% vs 7.4%) for demand savings. As a result, lower energy savings were realized than reported and higher demand savings were realized than reported.

> Recommendation 13: Consider documenting HVAC system type during initial site assessments and implementing an IF based on HVAC system type for reported calculations of energy and demand savings.

Conclusion 14: Coincidence factors account for the greatest impact to low demand savings RRs.

As discussed in Section 3.4.1, The evaluation team relied on light logger analysis to measure the CFs at sampled projects. The team found the summer CF to be an average of 47% lower than reported and the average winter CF to be 58% lower than reported. For measures that did not have available logger data, the evaluation team assumed summer CF values based on the project's building type and a single winter CF value based on the average of all logger findings.

> Recommendation 14: Include a CF term in summer and winter demand savings calculations based on evaluation findings.

4 Commercial Behavioral Program

The Commercial Behavioral program first launched as a pilot in 2019, and as a full program beginning in 2020. After transitioning to a new implementer at the beginning of 2023, the program began distributing Business Electric Reports (BERs) in April 2023. This program engages commercial customers in energy saving behaviors through the distribution of BERs. The goals of the program are to spur positive behavior change related to energy efficiency, drive the installation of energy-efficient equipment and to promote participation in Georgia Power's other energy efficiency offerings to commercial customers. The 2023-2025 program implementer, Bidgely, introduced an online Energy Portal to complement the BERs that customers could access to view insights about their energy use, their energy tips, and other Georgia Power commercial programs.

In 2023, BrightLine Group and Cadmus Group (the evaluation team) conducted interviews with Georgia Power and Bidgely implementation staff. In the spring of 2024, the evaluation team conducted a survey with customers who received BERs over the past year (the treatment group) and compared their responses to customers who did not receive BERs (the control group) to gauge satisfaction with the BER, learn about energy-efficient actions taken as a result of the BER, and assess awareness of Georgia Power's programs.

The survey results indicated that the BERs provide valuable information to the treatment group recipients and had a significant positive impact on customer satisfaction with Georgia Power, echoing findings from the 2020 evaluation. A majority (90%) of treatment customers at least skimmed the BER content. Treatment customers used the BERs and were empowered to take energy-efficient actions, while control group respondents indicated a need for this information. Significantly more treatment group customers that used the new Energy Portal were familiar with Georgia Power's energy efficiency programs for commercial customers, indicating that users are taking in information from these resources and often reported making energy-efficient changes as a result. When asked about their satisfaction with different aspects of their service with Georgia Power, treatment customers tended to give higher satisfaction ratings than control group respondents – especially those who read the BERs - and described a propensity for many energy-efficient changes to their businesses. These are indicators that the BERs and Energy Portal are functioning as intended.

The impact evaluation found no statistically significant energy savings from the Commercial Behavioral program for the 2023 program year. Despite testing various model specifications, the savings remained statistically insignificant. However, the program positively influenced cross-program participation and uplift savings, underscoring its value beyond direct energy savings. These contributions highlight the program's overall value to the portfolio.

COMMERCIAL **BEHAVIORAL** PROGRAM

Program Participation

- **36,029** treatment customers received Business Energy Reports in 2023
- **874,193 kWh reported savings**, but **0 net verified kWh** due to lack of statistically significant findings in the billing analysis
- The Business Energy Reports spurred participation in other Georgia Power programs, estimated at **2.4 kWh per customer**

Evaluation Results

Commercial Behavioral achieved a realization rate of **0%** for energy savings.

0%

for energy savings

Findings & Recommendations

FINDING 1
Treatment customers found BERs useful, accurate and contain relevant business comparisons, and the reports spurred positive energy efficiency actions and attitudes toward Georgia Power. Despite the encouragement to make energy efficiency actions, the treatment group did not report making upgrades at a more significant rate than the control group.

FINDING 2
The new Energy Portal fostered awareness and interest in energy-efficient practices.

RECOMMENDATION
Explore whether the portal can include more comparisons of similar businesses as suggested by participants. Include portal data in the BERs to encourage visits to the portal and track portal use.

FINDING 3
As noted in the prior evaluation, the BERs have a significant impact on customer satisfaction and knowledge empowerment for customers who regularly read their reports. Treatment respondents, whether they regularly read their reports or not, had higher overall satisfaction with Georgia Power. Treatment respondents who read BERs regularly indicated significantly higher levels of knowledge about saving energy.

RECOMMENDATION
Leverage the connectivity between the BERs and the Energy Portal and Georgia Power website to ensure that linkages to program incentives are consistent and complementary.

FINDING 4
Although the program did not yield statistically significant energy savings, the program demonstrated a positive contribution to cross-program participation and uplift savings, indicating its value as an engagement, education, and communication tool for the program portfolio.

RECOMMENDATION
Leverage the BERs to focus on energy savings opportunities through Georgia Power's existing programs to emphasize cross-participation over individual energy-savings actions.

4.1 Program Overview

Georgia Power designed the Commercial Behavioral program to encourage customers to actively manage their facility's energy use by equipping them with knowledge and tools to reduce energy consumption. Through the Commercial Behavioral program's BERs, Georgia Power provides customer-specific reports four times per year via postal mail. These reports contain historical customer energy-use data and comparisons to average anonymous peer businesses. The BERs also include seasonal and facility-appropriate energy savings tips and energy efficiency program information. The Commercial Behavioral program has evolved since Georgia Power originally launched the program as a pilot in 2019. After an initial cycle with Agentis as implementer, Georgia Power engaged Bidgely for the 2023-2025 program cycle to revise the treatment and control group assignments and offer an online portal to complement the BERs. Bidgely also designed the report content in collaboration with Georgia Power. In April 2023, over 36,000 commercial customers with metered accounts and demand usage up to 500 kW received their first BERs.

It is important to note that behavioral programs typically take one to two years to reach a steady state of savings, offering the opportunity to refine report content and delivery. Given the length of time it takes behavioral programs to reach maturity, savings after only the first year of treatment may not be indicative of future trends.

4.2 Program Participation and Achievements

The Commercial Behavioral program launched the first BER in April 2023 to approximately 36,000 commercial customers. Over the course of 2023, the implementer estimated savings of 874,193 kWh, which was just over 10% of the annual savings goal of 8,002,058 kWh. The evaluation team conducted an impact evaluation of the Commercial Behavioral program's first year of operation with Bidgely as the implementer (April 2023 through May 2024) using two general models to estimate energy savings, as described in the Uniform Methods Project[17]: the difference-in-differences (D-in-D) model and the post-only (lagged dependent) model. The evaluation team found savings were not statistically different from zero, which results in zero evaluated savings. Behavioral programs can take multiple years to reach a steady state of savings, and the results from this first impact analysis of the redesigned randomization does not represent long-term indicators for the program.

The estimation results were inconsistent across the two models and estimated treatment effects were not statistically significant in either model. The D-in-D model estimated a decrease of 0.33 daily kWh in energy

[17] Stewart, Jim, and A. Todd. 2020. The Uniform Methods Project: Methods for Determining Energy-Efficiency Savings for Specific Measures. "Chapter 17: Residential Behavior Protocol." Prepared for National Renewable Energy Laboratory, Golden, Colorado. NREL/SR-7A40-77435. https://www.nrel.gov/docs/fy21osti/77435.pdf

consumption per customer, while the post-only model estimated an increase of 0.05 daily kWh in energy consumption per customer. Table 4-1 compares reported savings and the annual energy savings goal.

Table 4-1. Commercial Behavioral Program Achievements - Energy

Timeframe	Reported kWh	Verified Net kWh	Annual Energy Savings Goal	% of Annual Goal
2023	874,193	0	8,002,058	0%

4.3 Methodology

To evaluate the Commercial Behavioral program, the evaluation team conducted interviews with program staff, surveyed treatment and control group customers, and performed the billing analysis.

4.3.1 Research Questions

Through this evaluation, the evaluation team addressed the research objectives below. Given that the program is new, the evaluation activities emphasized prospective enhancements and focused on providing actionable feedback on report content. This report addresses the research objectives shown in Table 4-2.

Table 4-2. Commercial Behavioral Program Evaluation Research Questions

Research Questions	Indicators/Areas of Investigation	Research Tools
How effective are the implementation contractors, including data tracking, quality control, and communication?	▶ Completeness and clarity of tracking data	Stakeholder interviews, database review
How satisfied are treatment customers with the BERs and web portal, and how does this compare to the prior evaluation cycle?	▶ Treatment customer satisfaction with the BER	Treatment and control survey
What kind of influence have the BER and web portal had on customer adoption of energy efficiency measures?	▶ Customer-reported energy-efficient actions taken	Treatment and control survey
How aware are customers of their facility energy use and how has the BER and web portal impacted their knowledge and awareness?	▶ Treatment customer use of BERs ▶ Difference between treatment and control group knowledge and awareness	Treatment and control survey
Which assessment messages and online tools are most effective in encouraging treatment group engagement?	▶ Focus group feedback on possible BER content ▶ Treatment customer satisfaction with BER ▶ Treatment customer recommendations for BER improvement	Pre-Implementation focus groups, Treatment and control survey

Research Questions	Indicators/Areas of Investigation	Research Tools
What are the accurate and supportable gross energy and demand impacts of the program?	▶ Estimation of program savings	Billing analysis
What are the accurate and supportable net energy and demand impacts of the program?	▶ Estimation of program savings	Billing analysis

4.3.2 Stakeholder Interviews

The evaluation team conducted separate interviews with the Commercial Behavioral program manager and the CEEP implementation manager in March and June of 2023. These meetings provided the evaluation team with foundational information about program eligibility and planned BER content. They also included a discussion of the new Energy Portal that Bidgely had implemented.

4.3.3 Treatment and Control Group Survey

The evaluation team conducted surveys with treatment group customers who started receiving the full BERs in August 2023 and with control group counterparts. Treatment customers are those who received BERs, while control customers are those who are in the comparison group of customers who do not receive BERs. The control group is used to compare the difference in savings and other metrics to assess the effectiveness of the treatment (in this case, the BERs and Energy Portal).

The evaluation team developed a single-survey instrument for the treatment and control group customers. The survey included identical questions for both groups. Only treatment group customers received questions about engagement and satisfaction with the BERs and the Energy Portal. Respondents were entered into a drawing to receive one of ten $100 gift cards (per survey). The evaluation team received responses from 265 treatment customers and 175 control customers. Table 4-3 shows the final response rate.

Table 4-3. Treatment and Control Survey Sample and Results

Respondent Group	Population	Sample with Valid Email/Contactable	Sample Frame	Responses	Response Rate
Treatment	36,029	14,290	11,504	265 (128 responded to all treatment questions)	2.3%
Control	18,102	7,226	5,839	175	2.9%

4.3.4 Billing Analysis

The evaluation team collected monthly billing data for each of the treatment and control group customers. The team collected bills for each of the 12 months prior to the first BER reports which were sent out in April 2023 and for 12 months after treatment began, through May 2024.

The evaluation team also collected National Oceanic and Atmospheric Administration (NOAA) daily temperature data from weather stations across Georgia.[18] The team estimated cooling degree days (CDDs) and heating degree days (HDDs) for each customer during the billing cycle, using a base temperature of 65°F. Using billing cycle end dates, the team calculated HDDs and CDDs that exactly matched time periods of energy use in each customer bill.

To fit monthly designations for the billing analysis, the team calendarized the billing data by creating an average daily consumption value for each billing cycling and assigning that value proportionally to the number of days each month in the cycle.

Using the number of days in the billing cycle, the evaluation team determined monthly energy use, daily average energy use, and HDDs and CDDs, then merged the billing, weather, and program data (which included treatment and control indicators as well as address information to map weather), including the approximate delivery date for the first BER report.

To test the robustness of savings estimates, the evaluation team used two models –D-in-D fixed effects model and a post-only (lagged dependent) model, following industry best practice described in the Uniform Methods Project. [19]

The D-in-D model estimates savings by comparing changes between the pre and post periods as well as between the treatment and control groups. The first difference model does not capture true energy savings because some of the observed change is due to naturally occurring behavior change (that is not observable and directly measurable). Taking the second difference, subtracting the control group pre-post savings from the treatment group pre-post savings, accounts for naturally occurring behavior changes, as those changes occur in both the treatment and control group populations.

The post-only model regresses each customer's average daily energy consumption (in a given month-year) on a treatment indicator variable and other control variables. The control variables (regressors) include the customers' pre-treatment energy use by month, month-by-year fixed effects, and weather. The model only

[18] National Oceanic and Atmospheric Administration, Daily Temperature Data, https://www.ncei.noaa.gov/

[19] Stewart, Jim, and A. Todd. 2020. https://www.nrel.gov/docs/fy21osti/77435.pdf

uses post-treatment period (reporting period) customer bills to estimate energy consumption but includes pre-treatment (baseline period) bills as control variables.

Both the D-in-D and post-only regression models controlled for differences in temperature and time effects between treatment and control groups. We specified the models to estimate per-customer average daily savings. Model details are provided in Appendix B.3.

4.4 Impact Evaluation Findings

Based on the billing analysis, the evaluation team found no statistically significant savings from the Commercial Behavioral program in the 2023 program year. Two model specifications were tested, yet the savings remained statistically insignificant. Nevertheless, the program positively contributed to cross-program participation, with customers enrolling in other commercial programs at a rate 16% higher than those in the control group, resulting in 2.4 kWh uplift savings per customer, totaling 87,104 kWh. This highlights the beneficial effects beyond direct energy savings. These contributions demonstrate value of the program to the overall portfolio.

4.4.1 Net Savings Impacts

The billing analysis with the Randomized Control Trial (RCT) design produces net savings estimates. The estimate includes any spillover in treated customer business. There is no free-ridership in the net savings because customers did not choose to receive the BER; the savings are estimated against a randomized control group baseline that accounts for changes in energy use unrelated to the program treatment.

The evaluation team did not find a statistically significant treatment effect from the billing analysis, which uses 12 months pre- and post-treatment billing data. The evaluation team used two methods to estimate energy savings and check sensitivity and robustness: the D-in-D model which compares changes in outcomes over time between treatment and control group, and the post-only model which uses post-treatment period customer bills but includes pre-treatment bills as regressors. The D-in-D model estimates indicated a decrease in average daily energy consumption among treatment customers; however, this small decrease (0.33 kWh daily per customer) was not statistically significant. Conversely, the post-only model suggested an increase (0.05 kWh daily per customer) in energy consumption among treatment customers.

The discrepancy of the results from the two models suggests that the estimated effects of the program are not robust across different analytical approaches, which undermines the confidence in the estimated treatment effect. The p-values of 0.76 (D-in-D) and 0.83 (post-only) means that there is a significant probability, between 83% and 76%, that we would observe the estimated daily savings purely by chance, even if there is no actual treatment effect. The statistical insignificance implies that any observed differences are highly likely to be due to random variation rather than a true effect of the treatment. Given the uncertainty of the savings estimates is well beyond the industry standard threshold of 10%, it is not appropriate to assign verified savings and the resulting realization rate is 0%.

The experimental design of the program is designed to test the hypothesis that there is a treatment effect that encourages treated customers to reduce their energy use, thus generating savings. Every such experiment starts with a null hypothesis that there will be no difference in observed behavior between the treated group and the control group. Using the D-in-D approach, we compared the differences between the treatment and control groups, as well as pre- and post-treatment periods. Statistical methods are applied to estimate the difference between these groups (the point estimate), and, more importantly, to determine the probability that the observed difference occurred purely by chance (the p-value).

The p-value represents the probability of observing a difference at least as large as what is actually observed, even if the null hypothesis is true and there is no treatment effect. For example, the result of the D-in-D model estimated a savings of 0.33 daily kWh for each customer due to the program with a p-value of 0.76. If we conducted the same experiment an infinite number of times, with randomly generated treatment and control groups that remained the same size, a p-value of 0.76 means we would observe the savings of 0.33 daily kWh 76% of the time even if the true treatment effect was zero and BERs did not lead to any changes in behavior among treated customers.

The industry standard[20] for energy efficiency programs most often sets a p-value threshold of 0.10 when estimating savings, meaning that, if chances are greater than 10% that an effect is observed purely by chance, the level of uncertainty is not acceptable.

Table 4-4 shows the average daily savings per customer from both the D-in-D and the post-only models, along with the p-values for each of the coefficients and the 90% confidence intervals. The analysis included 32,888 treatment customers[21] and 18,102 control group customers, including the ones whose accounts were active in the beginning of evaluation period.

Table 4-4. Average Daily Savings per Customer Estimates by Model

Model	Average Daily kWh per Customer	p-value	Lower Confidence Interval	Upper Confidence Interval
D-in-D	0.328	0.762	-1.46	2.11
Post-only	-0.050	0.825	-0.42	0.32

[20] Stewart, Jim, and A. Todd. 2020.
Agnew, K., and M. Goldberg. 2017. Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures, Chapter 8: Whole-Building Retrofit with Consumption Data Analysis Evaluation Protocol. U.S. Department of Energy, National Renewable Energy Laboratory. https://www.nrel.gov/docs/fy17osti/68564.pdf

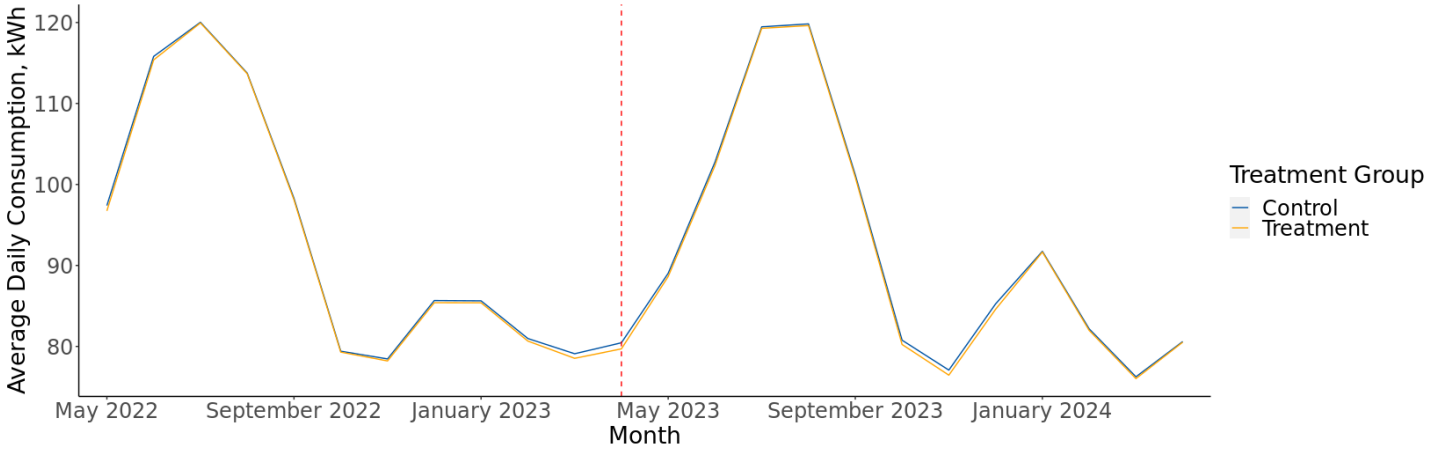
[21] The implementation contractor included 36,029 customers in the treatment group. However, only 32,888 of these customers were part of the initial randomization. To maintain the balance between the treatment and control groups and ensure the validity of the analysis results, the evaluation team included the initial 32,888 customers in the billing analysis.

The p-values for both savings coefficients are well above the 0.1 threshold to meet 90% confidence and 10% precision. Since the savings coefficients are not statistically different from zero, the average daily savings per-customer is therefore zero for the 2023 program year. The 90% confidence intervals represent the range of values where the true population mean is likely to be found[22]. Given the results of this analysis, the total estimated treatment effect (annual savings across all treatment customers) is likely to be within the range of (-17,530) MWh and 25,427 MWh. The confidence interval containing zero near the midpoint of the range is also indicative of zero savings.

The following figures provide illustrations of pre- and post-treatment period (once treatment begins) energy use patterns observed between the treatment and control groups to show how little difference was observed between the treatment and control groups. Usage patterns show average kWh usage, derived directly from the customer bills without any weather adjustments included in the billing analysis, and do not account for changes in weather between the pre- and post-treatment periods[23]. The differences are not the same as savings estimates derived from the models, which control for weather and other customer characteristics that do not vary over time.

Figure 4-1 compares average daily kWh per customer between the treatment and control groups. The vertical line in the figure divides the pre and post treatment periods. The program was launched on April 20, 2023. To obtain a clear understanding of the treatment's impact, we excluded April 2023 from the billing analysis and used May 1, 2023, as the beginning of the treatment (program) period.

Figure 4-1. Average Daily kWh per Customer by Treatment Group



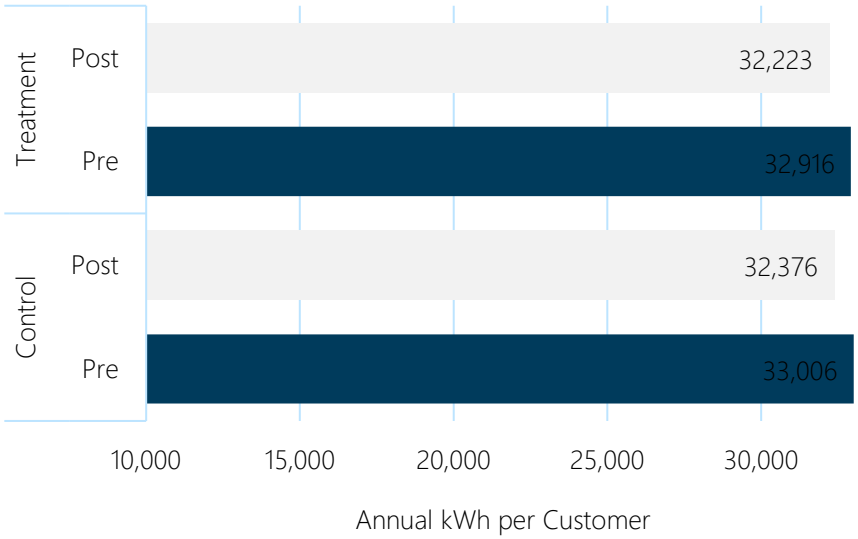
[22] More precisely, if we ran the same experiment an infinite number of times with different random samples, we would expect that the confidence interval would contain the true population mean 90% of the time.

[23] Some of the differences in raw kWh between pre and post-treatment periods are due to changes in weather. However, weather effects are balanced between the treatment and control groups via randomization and would affect both groups equally.

Figure 4-1 shows a high degree of overlap between the treatment and control group average daily kWh in most months. During the pre-period, there are many months with near-perfect overlap and only one line is visible except for March and April in 2023[24] (two months before the treatment). During the post-period, there are small differences in October and November, the treatment group has slightly lower average daily kWh.

Figure 4-2 compares pre- and post- treatment period average annual kWh per-customer for both the treatment and control group.

Figure 4-2. Average Annual kWh Usage by Period and Treatment Group



The control group decreased usage during the post treatment period by 1.9%, relative to the pre-period. The treatment group decreased only slightly more, by 2.1% relative to the pre-period.

The observed differences in both average monthly and average annual kWh were quite small. Modeled estimates of savings were also very small and were not statistically significant. Therefore, the evaluation team found zero verified savings for the May 2023 to May 2024 program period.

Demand savings are derived by applying an energy-to-demand factor, drawn from the Georgia Power Technical Resource Manual 3.0 and literature review, that are applied to evaluated energy savings estimates.

[24] To avoid noise around the treatment days and to obtain a clearer understanding on the treatment's impact, we dropped 2023 April data in the billing analysis.

Because there were zero verified energy savings during program period, with the energy to demand factor approach,[25] the demand savings would be zero during program period.

Table 4-5 summarizes verified energy and demand savings, comparing reported savings and the annual energy savings goal.

Table 4-5: Commercial Behavioral Program Savings Summary

Timeframe	Reported kWh	Verified Net kWh	Verified Net kW	Annual Energy Savings Goal	% of Annual Goal
2023	874,193	0	0	8,002,058	0%

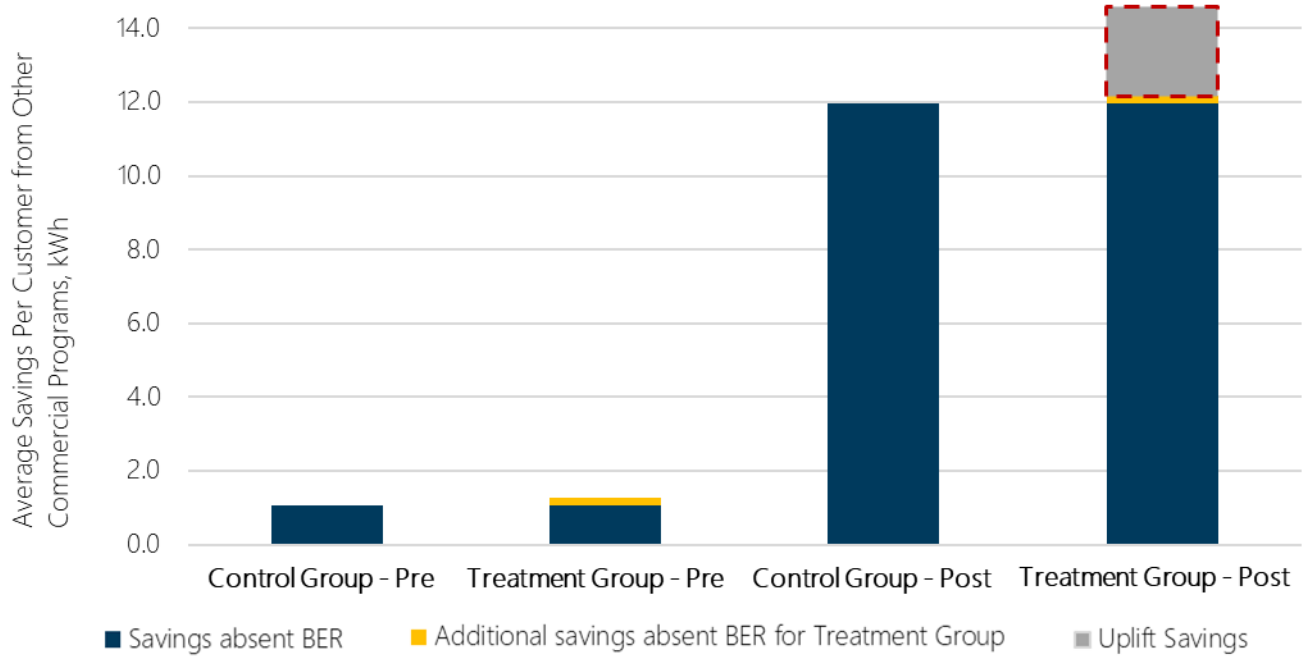
4.4.2 Uplift Analysis

The Commercial Behavioral program encourages customers to take a range of actions, including changing energy-use behaviors, purchasing energy-efficient products, and participating in other commercial energy efficiency programs. Uplift savings are the portion of net Commercial Behavior program savings achieved through incremental cross-participation in other Georgia Power commercial energy efficiency programs. Since no savings were verified for the program period, there is no risk of double-counting savings claimed by other programs. However, participation in other commercial energy efficiency programs through the Commercial Behavioral program provides a benefit to the overall Georgia Power's Demand Side Management portfolio.

The evaluation team estimated 2023 Commercial Behavioral program uplift savings by following the best practices outlined in the UMP. Appendix B.3 provides more details on the methodology. The positive uplift savings estimate means the commercial energy efficiency program savings per customer are higher for the treatment group than the control group. Figure 4-3 illustrates the average uplift savings per Commercial Behavior program customer. In the pre-treatment period, customers in the treatment group had marginally higher savings from other programs than those in the control group. However, following the launch of the program, in the post-treatment period, the treatment group's savings have substantially increased – shown in the grey section in the bar, this increment represents the uplift savings per customer, 2.4 kWh. In total, the uplift savings were 87,104 kWh across all Commercial Behavioral program customers.

[25] The Advanced Metering Infrastructure (AMI) hourly interval data are not available for the evaluation team to estimate demand savings.

Figure 4-3: Uplift Savings per Customer



The evaluation team also calculated participation uplift, which indicates the additive effect the Commercial Behavioral program has on participation in other commercial energy efficiency programs. The team found an additional 0.3 participants per 1,000 customers in the treatment group. On average, customers participating in the Commercial Behavioral program enrolled in other commercial energy efficiency programs at a rate of 16% higher than those in the control group.

4.4.3 Analysis of Savings Variability: Robustness and Sensitivity Analysis

The evaluation team completed some additional analysis to determine if savings differed based on certain characteristics.

Some of the groupings of customers show statistically significant savings and may show some positive results for some customer types. However, the program evaluated savings must account for the treatment effect across all treated customers, essentially taking a weighted average effect across all customers that results in zero program savings.

- The evaluation team created several indicators for various characteristics using 2020 census designations, including urban and rural designations mapped to customer zip codes..

- The team calculated account age by taking the difference between the date the customer's account opened and 2023, the year when the majority of BERs were sent. Ages were binned by quartile – 0 to 5 years, 5 to 10 years, 10 to 19 years, and more than 19 years.
- The team used the North American Industry Classification System (NAICS) codes contained in the customer data to characterize business types. The team also tested using just the first two digits of each code, representing a more broadly defined business type than the full NAICS code.
- The team also separated customers from the Services sector[26] and estimate saving for both Non-Services sector customers and Services sector customers.

The team tested whether the treatment effect differed significantly across any of the characteristics. The team included interaction terms between these characteristics and the treatment variable within the model. There was no evidence of a difference between urban and rural businesses and account ages. The estimated treatment effects and the interaction terms remain statistically insignificant (Table 4-6). Similarly to the last evaluation findings, for the customers with accounts that have been open for at least 10 years, the energy savings are positive, and the statistical significance level is higher (at the 10% significance level) for account age between 10 to 19 years.

Table 4-6: Savings Estimates by Characteristics: Robustness and Sensitivity Analysis

	Model (1): Urban and Rural		Model (2): Account Ages	
	Average Daily kWh per Customer	p-value	Average Daily kWh per Customer	p-value
Rural	-1.226	0.346		
Urban	-0.040	0.862		
Account Ages Quartile 1			-0.290	0.636
Account Ages Quartile 2			-0.506	0.261
Account Ages Quartile 3			0.574	0.103
Account Ages Quartile 4			0.081	0.800

Notes: Account Ages Quartile 1 represents accounts aged between 0 to 5 years; Quartile 2 represents account aged between 5 to 10 years; Quartile 3 represents accounts aged between 10 to 19 years; and Quartile 4 represents accounts aged over 19 years.

In the analysis for business types with two digit NAICS codes, although the interaction terms between one business type (food manufacturing) and treatment effect was statistically signficant (at the 5% significance level), the overal effect of treatment remains statistically insignificant. The energy savings in this business section and total energy savings are negative. In the analysis comparing Service sectors and Non-Service sectors, while the Service sector showed slightly statistically significant (at the 5% significance level) negative savings (additive consumption) in the post-only model, the results are inconsistent between the Post-only

[26] The Service sector was identified using NAICS code, encompassing 79 distinct sub-service sectors.

and D-in-D models. The D-in-D model results are statistically insignificant. Additionally, the estimates for the Non-Services sector were not statistically significant (Table 4-7).

Table 4-7: Savings Estimates for Customers in the Services and Non-Services Sectors

Model	Non-Services Sector		Services Sector	
	Average Daily kWh per Customer	p-value	Average Daily kWh per Customer	p-value
D-in-D	0.82	0.51	-2.13	0.20
Post-only	0.09	0.74	-0.71	0.02

4.5 Treatment and Control Group Survey Findings

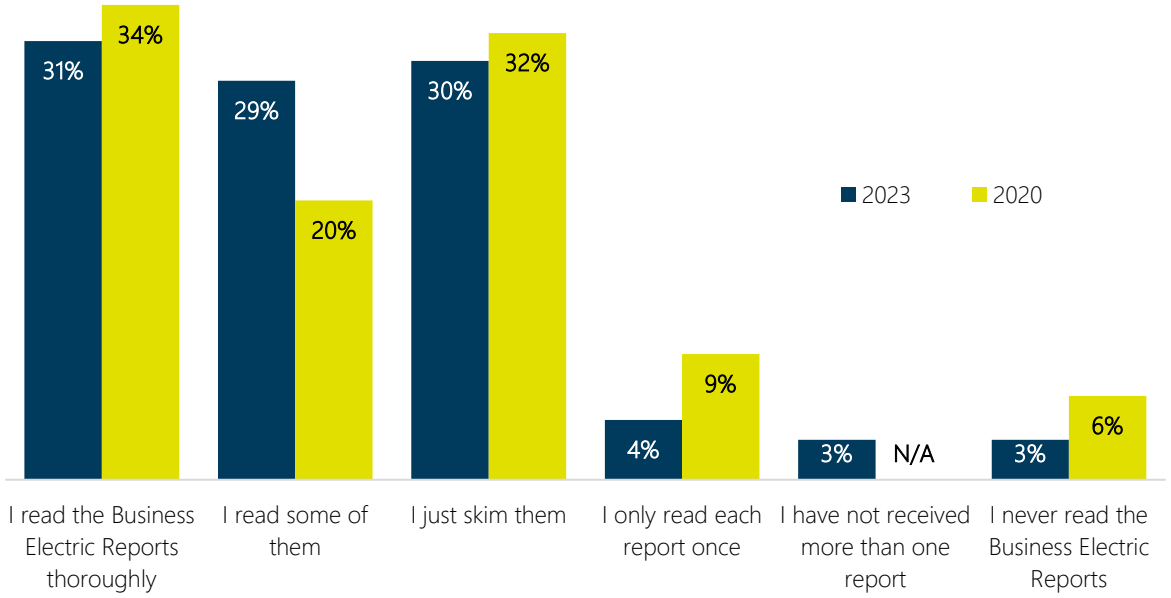
This section includes findings from the treatment and control group survey, organized by research objective:

- Feedback on the BER and Energy Portal (treatment group only)
- Satisfaction with Georgia Power
- Familiarity with Georgia Power's energy efficiency programs
- Adoption of specific energy-efficient products
- Adoption of energy-efficient behaviors

4.5.1 Feedback on the BER (Treatment group only)

About a third of treatment respondents read the BERs *thoroughly* (31%), and 90% at least *skimmed* the reports (Figure 4-4). This represented a small but not statistically significant increase from the prior program evaluation cycle. Ten percent of treatment respondents (all of whom answered a screening question that they recalled receiving BERs) said that they read the BERs *once* or *never*. Respondents who read BERs *once* or *never* were asked why they do not read them: two of four said they did not have time, one said because they are a tenant rather than owner of their building, and another said it was the first report they received.

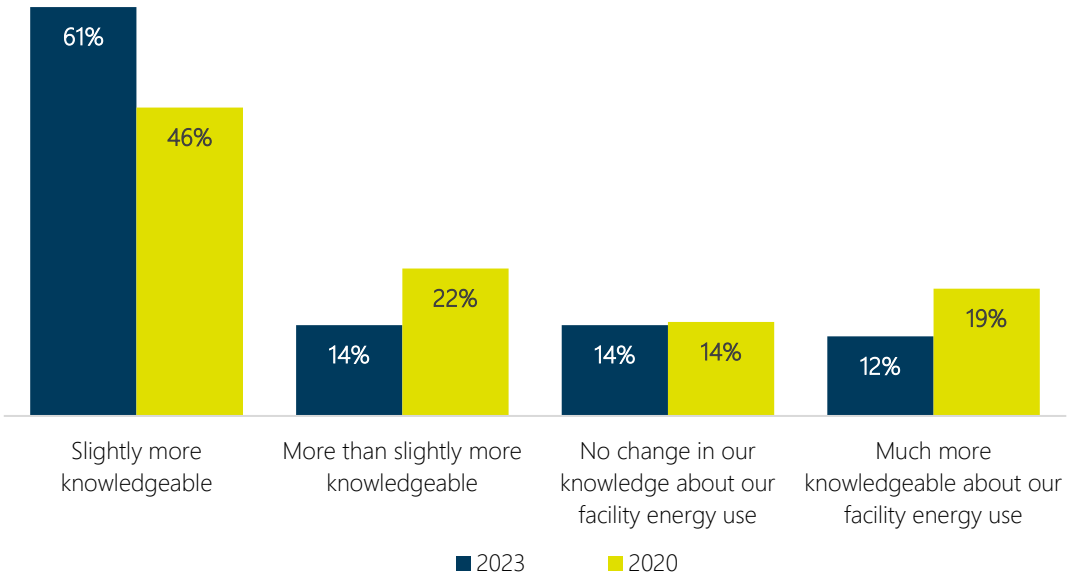
Figure 4-4. Reading Business Electric Assessments



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q29. "Which of the following statements best describes what you usually do with the Business Electric Reports you have received?" n=70. Percentages may not total to 100% due to rounding.

The evaluation team asked treatment respondents who *at least regularly skim* the BERs if doing so had changed their knowledge about their facility's energy use (Figure 4-5). Only 14% said that their knowledge did not increase, while over half said their knowledge had increased *slightly* (61%) and 12% said they were *much more knowledgeable*.

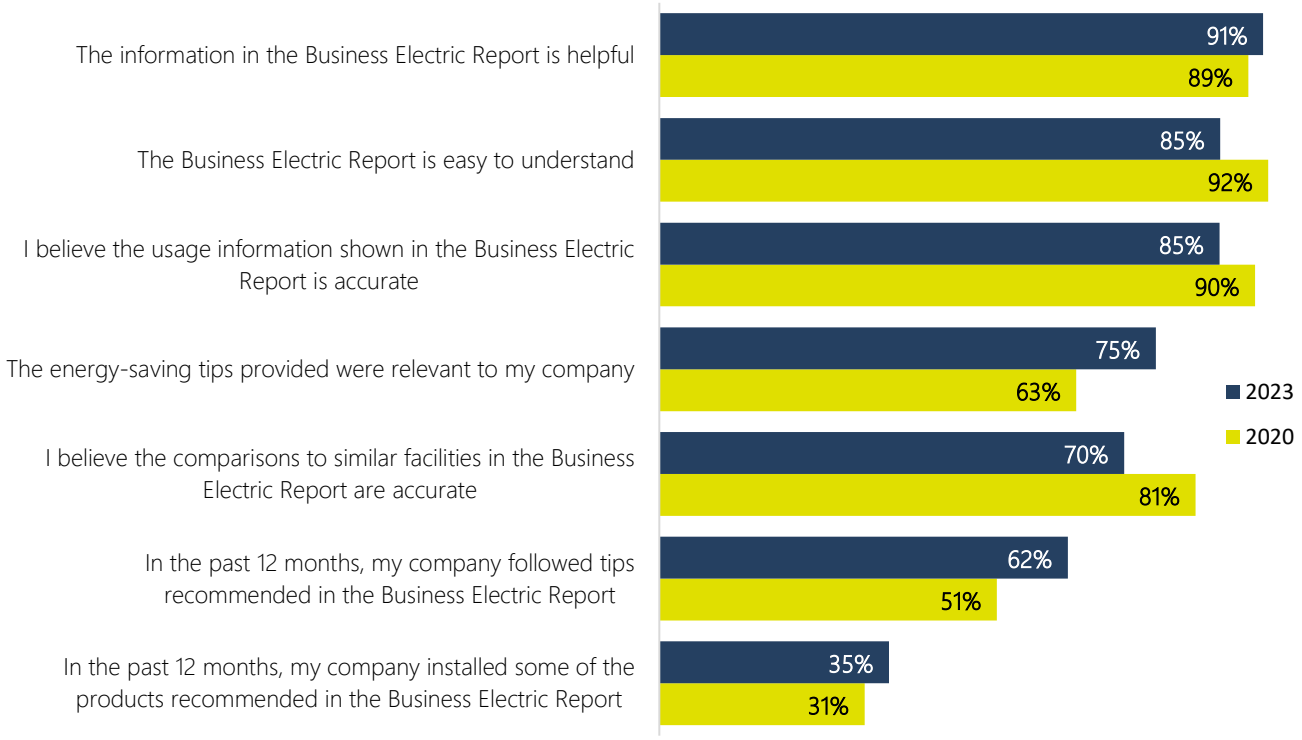
Figure 4-5. Business Electric Assessments and Knowledge About Facility Energy Use



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q31. "Have the Business Electric Assessments changed your knowledge about energy use at your facility?" n=59 (respondents who read BERs). Percentages may not total to 100% due to rounding.

The evaluation team asked treatment respondents who read BERs to rate their agreement with a series of statements about the reports (Figure 4-6). Most respondents *strongly* or *somewhat agree* that the BERs are easy to understand (85%), contain accurate usage information (85%), are helpful (89%), that the energy-saving tips are relevant for their company (75%). Respondents were less prone to agree that the BERs contained accurate comparisons to similar facilities (70%), that their company has followed tips from the BERs (62%), and only a minority agreed that they have installed recommended products (35%).

Figure 4-6. Business Electric Report and Knowledge About Facility Energy Use



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q32. "To what extent do you agree or disagree with the following statements about the Business Electric Assessment you received from Georgia Power? [LIST OF ITEMS]" n=47 to 62 (respondents who read BERs).

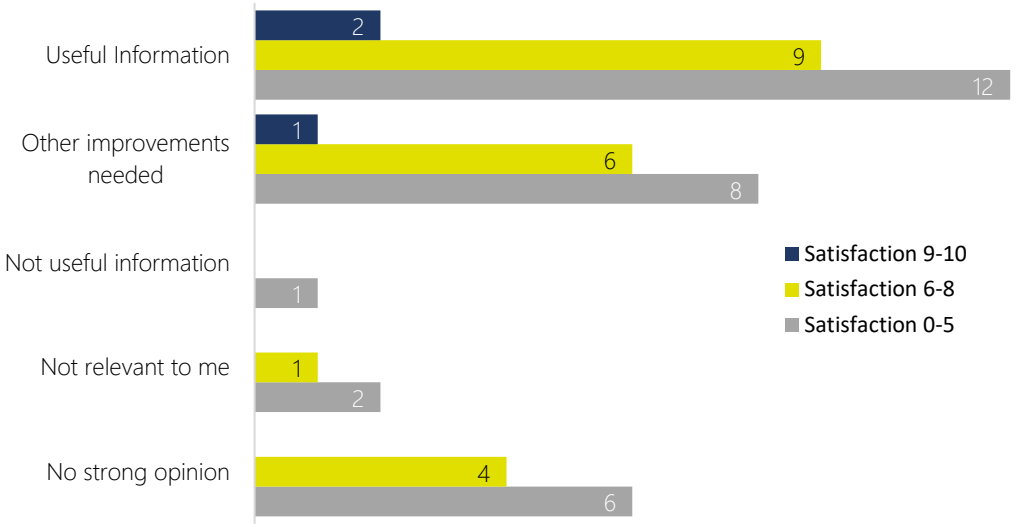
Of the 62% of respondents who said they followed tips from the BER, 15 provided information about actions they took (some took multiple actions). Six of 15 respondents installed efficient lighting, five adjusted HVAC systems or thermostats, and two turned off lights and equipment when building areas were not in use (respondents could mention more than one tip).

The evaluation team asked the 14 respondents who did not believe the comparison to similar facilities was accurate why this was so. Four of these 14 respondents said that their business was not comparable to others ("*I don't believe my market has comparisons in the area,*" "*the businesses in the area are all different sizes,*" "*Our building is different*"). Two highlighted the general nature of the comparisons ("*There is no independent study,*" "*It's hard to know.*") Others cited that their own energy use was significantly higher than others, that their safety lighting is always-on or that their energy bill fluctuates.

The evaluation team asked treatment respondents to rate their overall satisfaction with the BERs on a 10-point scale, and they gave average ratings of 6.4. Fifty-three percent of respondents gave ratings of 7 to 10.

The evaluation team asked treatment respondents why they gave the rating they did for the BERs and analyzed their responses by satisfaction rating (Figure 4-7). Respondents who gave 6 through 10 ratings for their satisfaction mostly cited the usefulness of the information in the BER (11 of 33 responses). For the respondents with the lowest satisfaction with BERs, they most cited other aspects they would like to see in the reports like comparisons to their business type or explanations on how to save energy.

Figure 4-7. Reasons for Satisfaction Ratings for BERs



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q38. "Please tell us why you gave that satisfaction rating for the Business Energy Reports." Satisfaction 9-10 n=2; Satisfaction 6-8 n=31; Satisfaction 0-5 n=16.

The evaluation team asked treatment respondents who gave the BER satisfaction ratings of 8 or lower what could be done to improve the BERs. Eleven respondents offered these suggestions:

More clarity/detail (2)

More communication from GPC (1)

More info on rebates (1)

More user friendly (2)

Lower costs (2)

Be more specific and have more helpful suggestions (2)

Be more specific to my use (1)

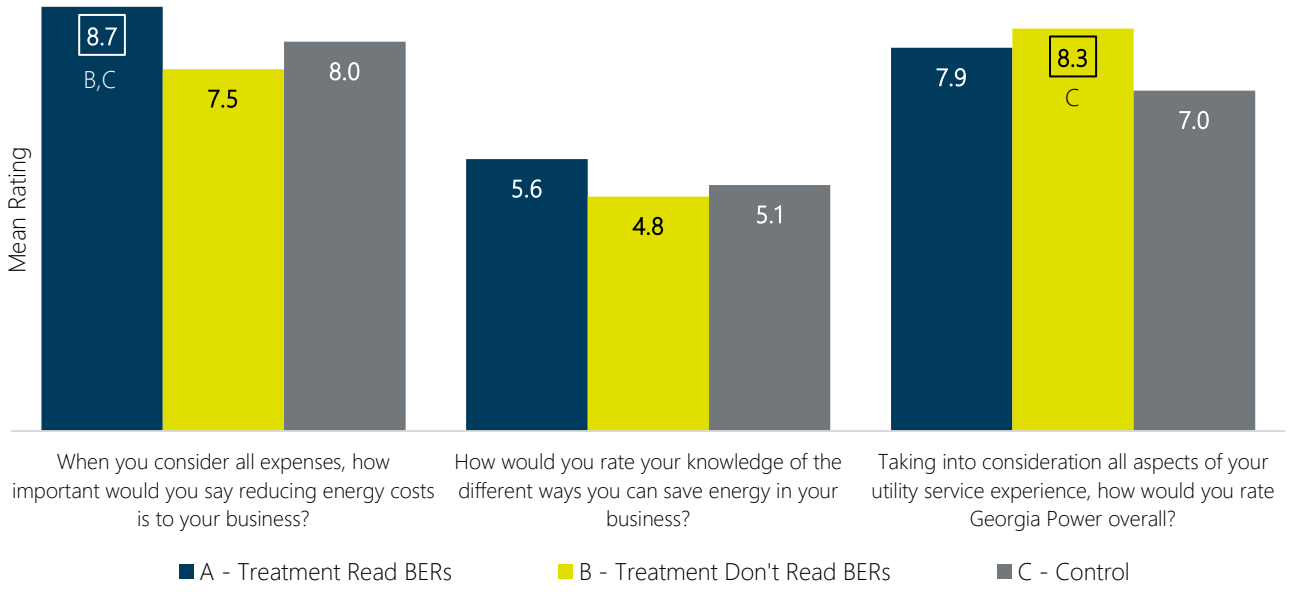
4.5.1.1 BER Engagement

The evaluation team analyzed differences between treatment respondents who read the BERs regularly (*thoroughly*, *read them once* or *read some of them*) and treatment respondents who recalled receiving BERs but skimmed or did not read them (*just skim them*, or *never read them*).

Figure 4-8 shows that treatment respondents who do not read BERs regularly had significantly higher overall satisfaction with Georgia Power (8.3, n=17) than control respondents (7.0, n=62). There was not a statistical difference between regular BER readers and those that did not read BERs. Regular BER readers rated their knowledge of how to save energy higher (5.6, n=43) than the other groups (treatment who do not read BERs 4.8, n=24 and control 5.1, n=98).

Treatment respondents who read BERs overall gave significantly higher ratings for the importance of reducing energy costs compared to control respondents. Overall treatment respondents who read BERs also have higher ratings for their knowledge on how to save energy for their business, though this was not statistically significant.

Figure 4-8. Ratings Differences by BER Engagement



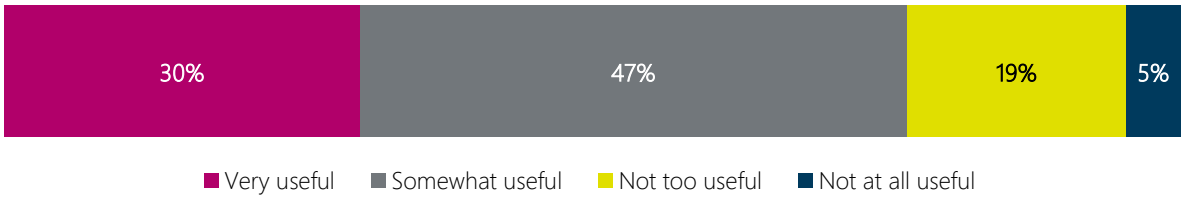
Source: Commercial Behavioral Program Treatment and Control Survey. Question Q11. "When you consider all expenses, how important would you say reducing energy costs is to your business?" Question Q12. "How would you rate your knowledge of the different ways you can save energy in your business?" Question Q24. "Taking into consideration all aspects of your utility service experience, how would you rate Georgia Power overall?" Question Treatment Read BERs n=29 to 43; Treatment Do Not Read BERs n=17 to 24; Control n=62 to 100.

Boxes around numbers indicate the rating is statistically higher than another group at a significance level of $p<0.10$ using ANOVA. The letters below significance boxes show which group(s) that rating is significantly higher than.

4.5.1.2 Energy Efficiency "Tips" Emails

Most treatment respondents (65%, n=66) recalled receiving emails from Georgia Power that included tips on reducing energy use in their businesses. Over three-quarters of treatment respondents (77%) said that they found these emails *very* or *somewhat useful* (Figure 4-9).

Figure 4-9. Usefulness of Georgia Power Emails



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q41. "How useful have you found these emails to be in helping you learn what you can do to reduce your business' energy usage?" n=43 (respondents who recalled receiving emails).

The evaluation team asked respondents who recalled receiving emails but did not find them *very useful* what could be done to improve them. Seven respondents offered suggestions: four said that the tips and information could be more specific to their businesses, and three requested more details or mentioned that they need to read them.

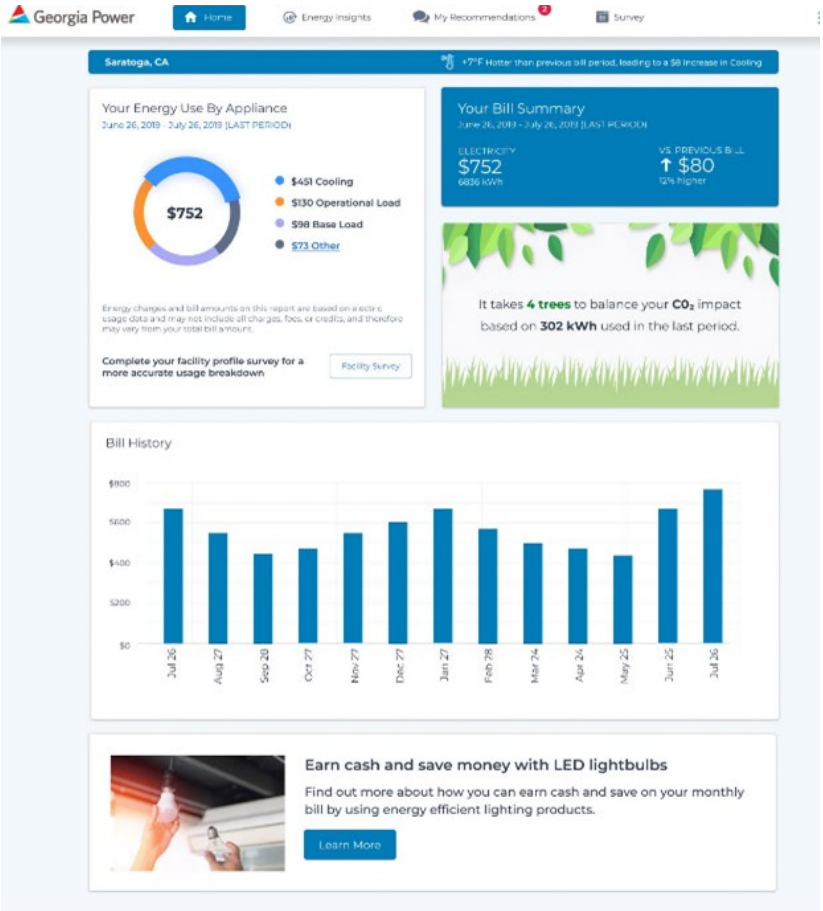
4.5.1.3 Engagement and Satisfaction with the Energy Portal

In 2023, treatment respondents also had access to the Energy Portal designed by Bidgely, the implementer. The evaluation team and Georgia Power reviewed the contents of the portal and what information respondents were able to access and update about their business. The portal includes the following:

- Homepage with energy use by appliance, bill summary, carbon impacts, bill history and energy tips.
- Energy Insights Page - with detailed views of energy use by appliance and total usage
    - Energy Details, Monthly Summary, Bill Analysis, Activity Map subsections.
- 'My Recommendations' page
    - Including the top tips and other recommended programs.
- Survey page
    - Allows customers to update their business information to customize their tips and recommendations.

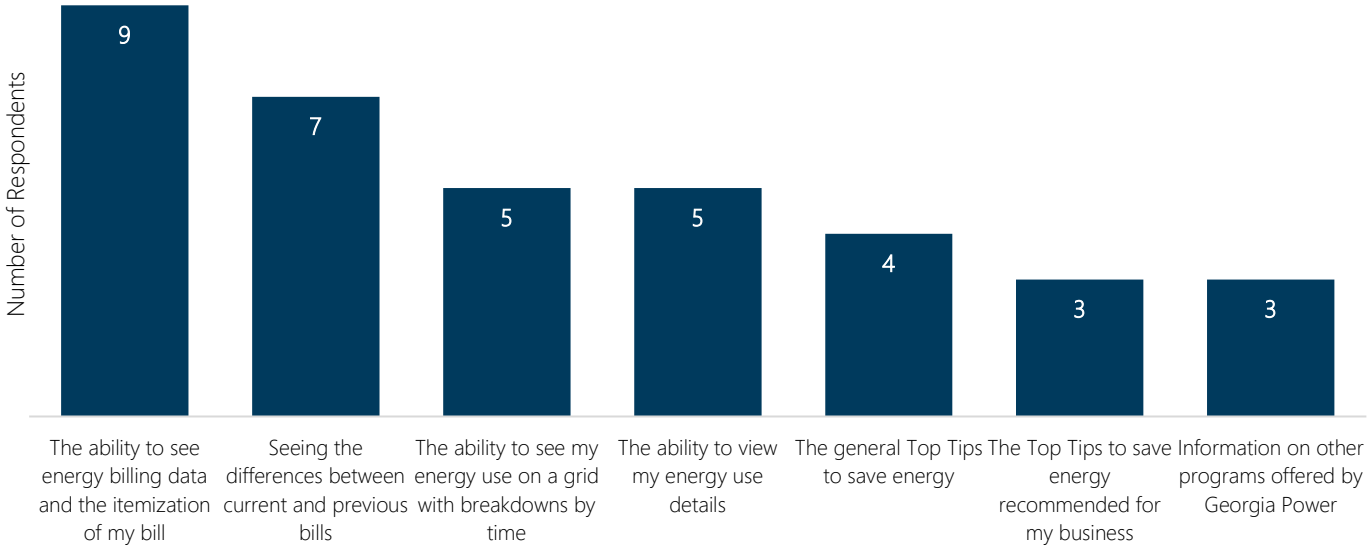
An example of the portal may be seen below in Figure 4-10.

Figure 4-10. Bidgely Energy Portal Homepage



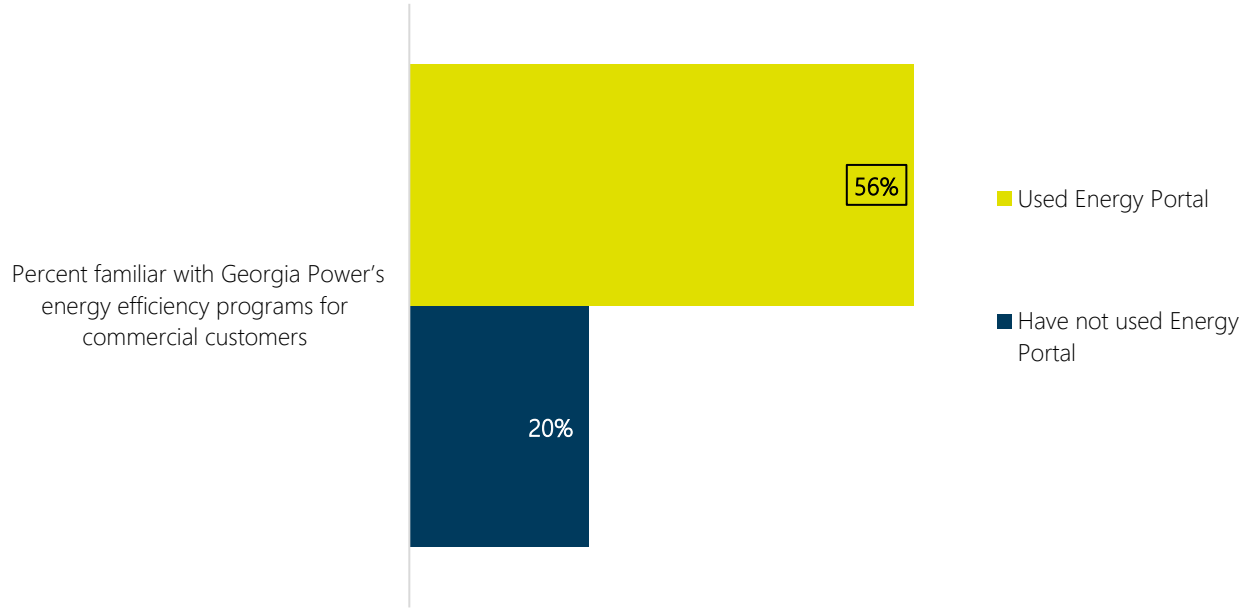
Treatment respondents found their ability to view their billing information as the most useful aspect of the Energy Portal followed by the breakdown of their energy use (Figure 4-11). Treatment respondents who reported using the Energy Portal also were significantly more likely to say they were familiar with Georgia Power's energy efficiency programs for commercial customers (Figure 4-12).

Figure 4-11. Useful Aspects of the Energy Portal



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q47. "What have you found useful about the Energy Portal? Examples of the Energy Portal can be seen below." n=36

Figure 4-12. Familiarity with Energy Portal and Georgia Power Programs



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q43. "Have you utilized the Energy Portal to view your energy use and see energy insights…?" n=61 and Question Q4. "How familiar would you say you are with Georgia Power's energy efficiency programs…" n=66

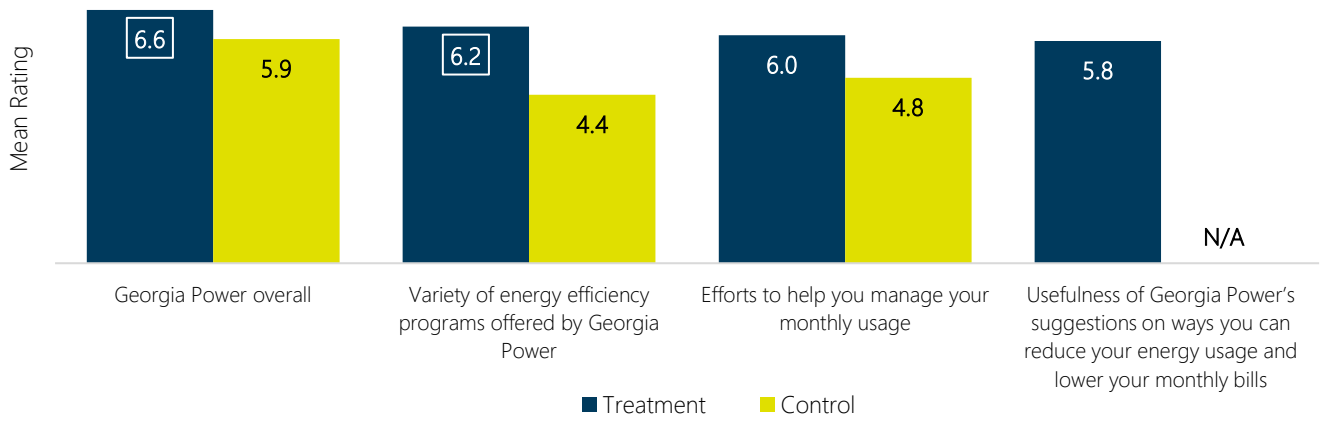
Boxes around numbers indicate a statistically significant difference of p<0.10 using a binomial t-test.

Treatment respondents that used the portal (56%) were also asked to rate their satisfaction with it. Sixteen of the 28 respondents rated their satisfaction as an 8-10 on a 0-to-10-point scale. The only comment to improve the portal was a suggestion to "compare like businesses" which was a sentiment shared in other questions and commonly seen for programs that provide energy reports.

4.5.2 Satisfaction with Georgia Power

Survey respondents rated their satisfaction with Georgia Power and their energy efficiency programs on a 0-to-10-point scale (Figure 4-13). Treatment respondents gave average ratings that were statistically significant for their satisfaction with Georgia Power and the variety of the programs offered. Respondents who gave Georgia Power overall satisfaction ratings of 5 or lower were asked why they gave that rating. Thirty-six respondents offered comments on why they give a rating of 5 or lower. These respondents cited high energy costs, issues with their bill, lack of information, and communication issues with Georgia Power staff.

Figure 4-13. Average Satisfaction Ratings for Georgia Power



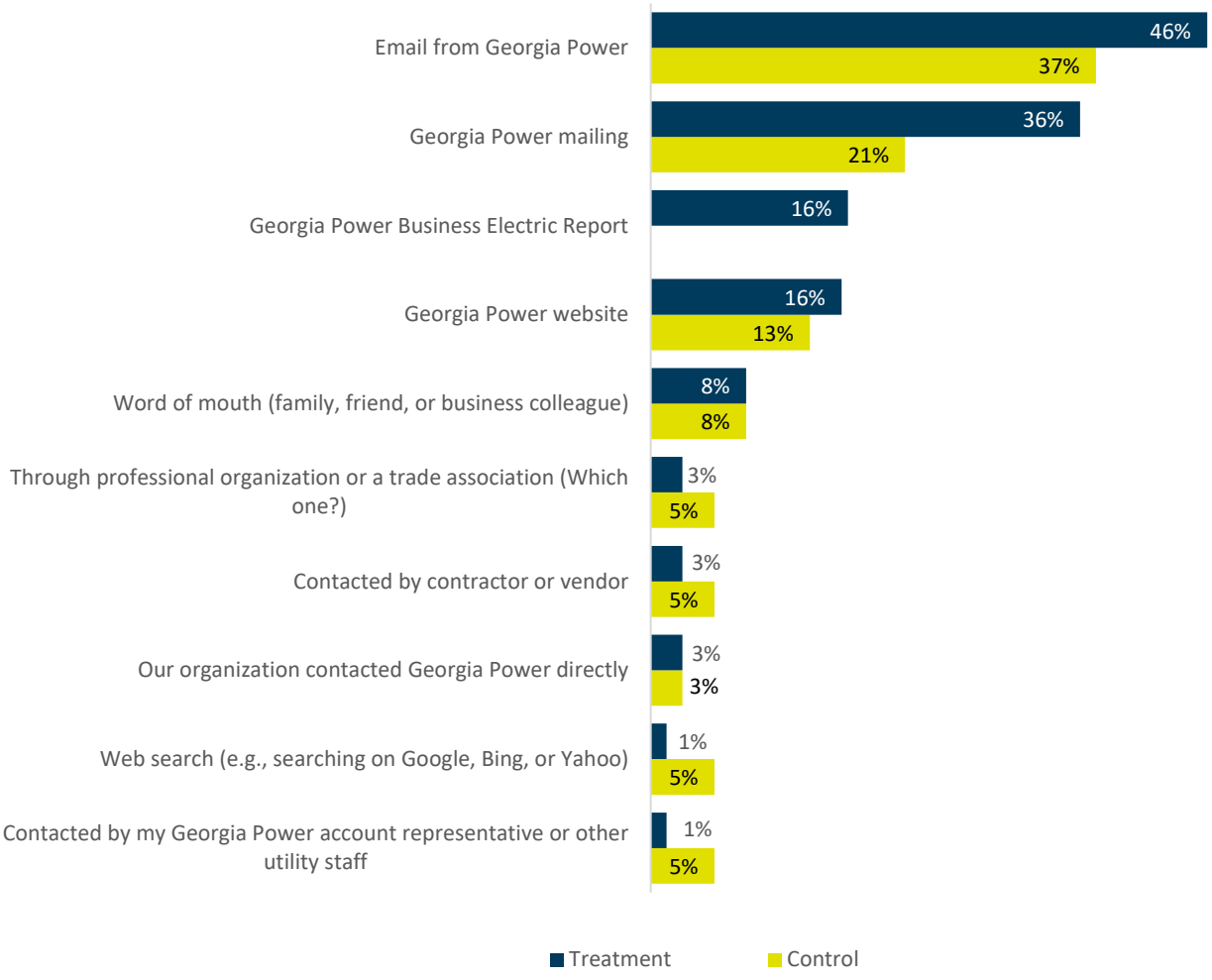
Source: Commercial Behavioral Program Treatment and Control Survey. Question Q24. "Taking into consideration all aspects of your utility service experience, how would you rate Georgia Power overall?" Question Q26. "How satisfied are you with the variety of energy efficiency programs offered by Georgia Power?" Question Q27. "How satisfied are you with Georgia Power's efforts to help you manage your monthly usage?" Question Q28. "How would you rate the usefulness of Georgia Power's suggestions on ways you can reduce your energy usage and lower your monthly bills?" Treatment n=33-92 Control n=10-62

Boxes around numbers indicate a statistically significant difference of p<0.10 using a binomial t-test.

4.5.3 Familiarity with Georgia Power's Energy Efficiency Programs

Survey respondents were asked: *Before today, had you heard anything about Georgia Power's energy efficiency rebate programs for commercial customers that help businesses reduce their energy consumption and save money on their energy bills*? Overall awareness of Georgia Power programs was nearly identical for treatment (47%, n=66) and control (49%, n=35) groups. However, there were some differences in the sources of their awareness (Figure 4-14). Respondents from the treatment group were more likely to report learning about programs from Georgia Power mailings (36%) or emails (46%), which could include the BER, compared to those in the control group (21% and 37%). Sixteen percent of treatment respondents reported that they learned about programs from their BERs. In total, 98% of treatment respondents learned about Georgia Power programs from mailings, emails and/or the BER they received in the mail.

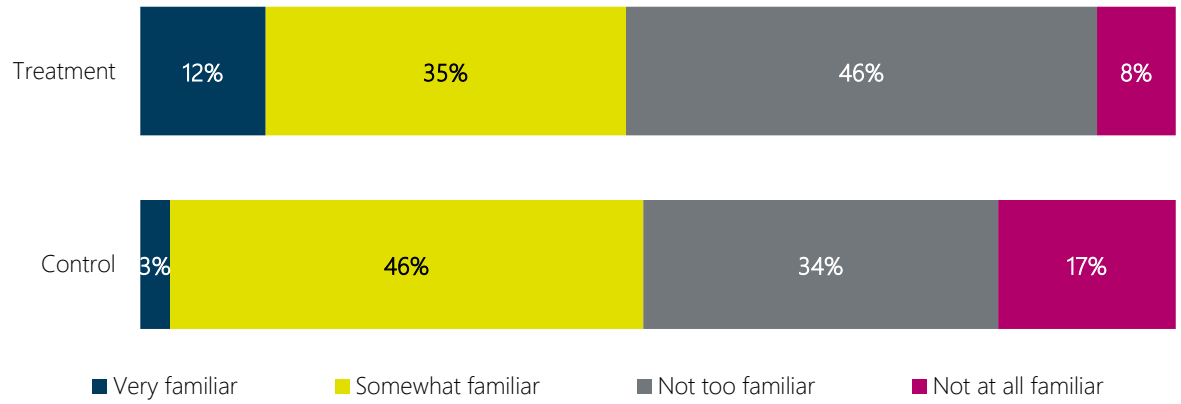
Figure 4-14. Sources of Awareness of Georgia Power Programs



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q3. "How did you learn about these programs? Please select all that apply." Treatment n=76; Control n=38 (respondents who were aware of Georgia Power programs). Percentages may total to more than 100% because multiple responses were accepted.

Respondents who were aware of Georgia Power programs gave similar ratings for their familiarity with the programs, with about half in each group saying they were *very familiar* or *somewhat familiar* (Figure 4-15). Treatment respondents who read the BERs were significantly more likely to be *very familiar* compared to Control respondents. Note that respondents described product categories as opposed to program names, such as Custom or Prescriptive.

Figure 4-15. Familiarity with Georgia Power Programs



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q4. "How familiar would you say you are with Georgia Power's energy efficiency programs for commercial customers?" Treatment n=66; Control n=35 (respondents who were aware of Georgia Power programs).

Most respondents who had some familiarity with Georgia Power programs mentioned lighting upgrades when asked which programs come to mind.

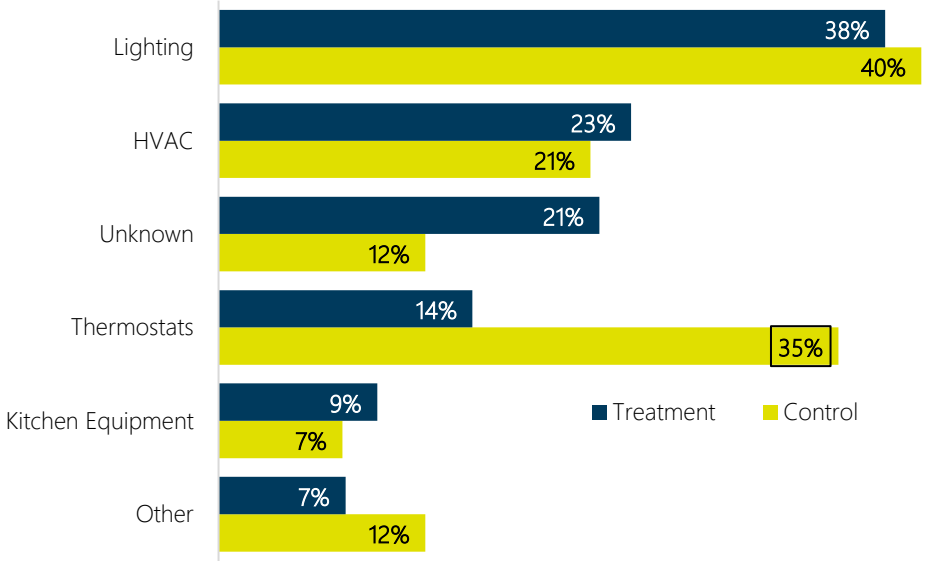
Seven treatment and four control respondents reported participating in a Georgia Power program in the past year, representing about 5% of each group. All these respondents reported upgrading lighting to LEDs. The other respondents did not specify which programs they participated in.

Most respondents reported that they were *very likely* or *somewhat likely* to participate in a Georgia Power program in the next six months (60% treatment and 64% control); there were no statistically significant differences between the treatment and control groups.

Respondents who said they were *very likely* or *somewhat likely* to participate in a Georgia Power program in the next six months most frequently mentioned lighting upgrades, HVAC upgrades and smart thermostats as the equipment they were looking to upgrade as seen in Figure 4-16. The only statistically significant difference between the two groups was that respondents in the control group were more likely to mention

thermostats. The *other equipment* mentioned by respondents included solar panels, windows and specific equipment for their business.

Figure 4-16. Equipment Considered for Upgrades through Georgia Power Programs



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q8. "Which type of equipment are you most likely to consider upgrading through a program to improve the energy efficiency of your facility?" Treatment n=56; Control n=43 (respondents who were likely to participate in a program). Percentages may/may not total to more than 100% because multiple responses were accepted, and certain responses were unspecific.

Boxes around numbers indicate a statistically significant difference of p<0.10 using a binomial t-test.

4.5.4 Adoption of Specific Energy-Saving Products

Respondents in both groups reported that they made energy-efficient upgrades and improvements in the past year at different rates: 55% treatment (n=118) and 43% control (n=74) however this difference was not significant. Treatment respondents who read the BER were significantly more likely than control respondents to say that they had made energy-efficient upgrades/improvements[27]. The types of equipment they installed or upgraded were also similar, with roughly three-quarters of respondents in each group making lighting upgrades. There were no statistically significant differences between the treatment and control groups. Thirteen percent of treatment customers and 11% of control customers installed HVAC measures; other measures represented about 6-11% or less of the measures installed.

Respondents from both groups who made energy efficiency upgrades in the past year gave similar reasons for making the upgrades. Most respondents from both groups gave *very important* ratings for replacing old or broken equipment: treatment (64%) and control (58%). Many respondents from each group also said

[27] Statistically significant difference at p<0.10 using a binomial t-test.

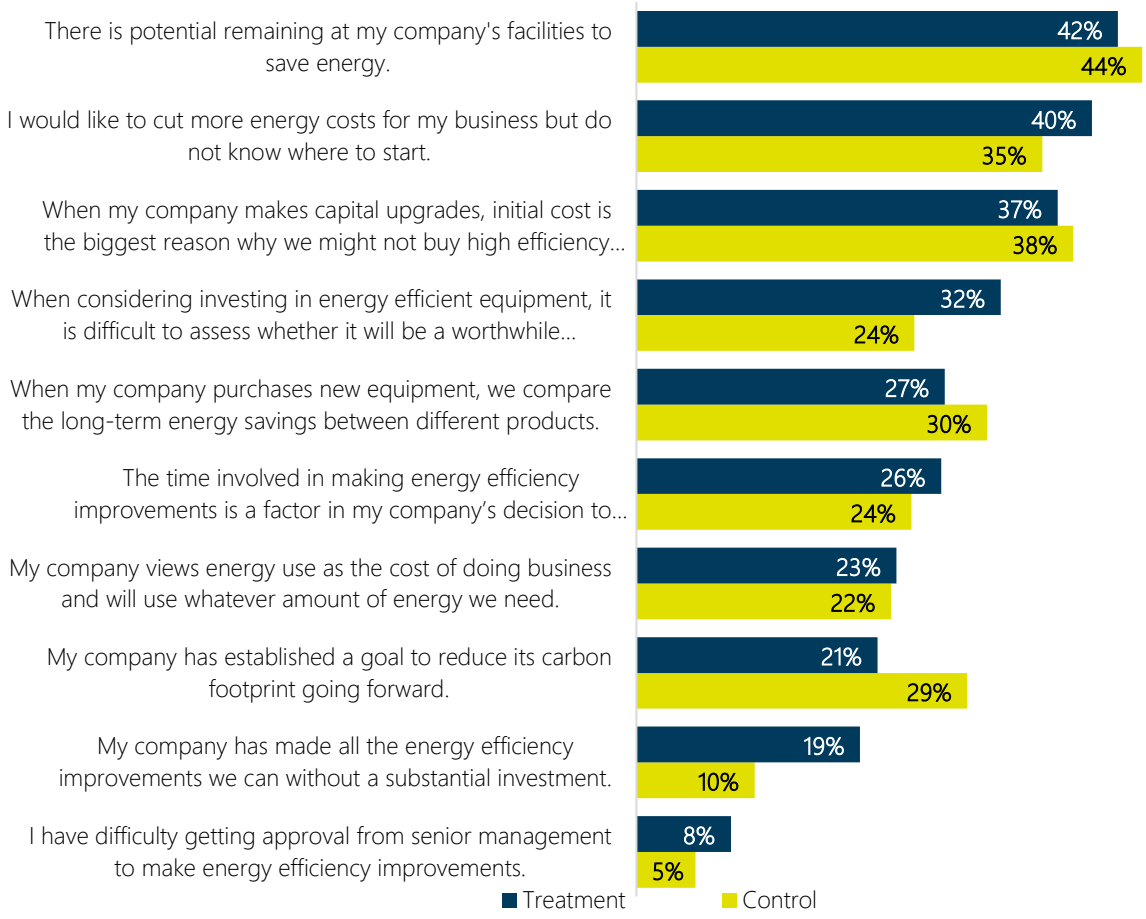
reducing energy consumption or demand was also *very important:* 59% treatment and 66% control. For 40% of treatment respondents who made upgrades, BERs were *very important.* A few respondents in each group said their company policies about purchasing efficient equipment were *very important:* 15% treatment and 18% control.

4.5.5 Adoption of Energy-Saving Behaviors

Many respondents from each group rated saving money on their energy bills as *very important* (68% of treatment and 69% of control respondents gave ratings of 8 to 10 out of 10). However, fewer respondents in each group rated themselves as *very knowledgeable* about how to save energy (24% of treatment and 13% of control respondents gave ratings of 8 to 10 out of 10). Overall, treatment and control respondents placed the same level of importance (8.0) on the importance of saving money on energy bills. Treatment respondents rated their knowledge of the different ways to save energy as significantly higher than the control group respondents (5.6 versus 5.1).

Respondents rated their agreement with ten statements about factors that may influence decisions to install or upgrade equipment (Figure 4-17). Treatment respondents agreed most strongly that they would like to cut energy costs but did not know where to start (40% strongly or somewhat agree), followed by initial costs (37%) and if the investment would be worthwhile (32%). Control respondents responded similarly to treatment respondents. Relatively few respondents in either group strongly agreed with statements about it being difficult to get approval from management (8% treatment, 5% control).

Figure 4-17. Strong Agreement with Factors that Influence Energy Efficiency Upgrades



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q13. "Please rate your level of agreement with the following statements. [LIST OF ITEMS]" Treatment n=103-145; Control n=78-98.

Respondents shared what challenges they face when making energy efficiency improvements for their business. There were no statistically significant differences between the treatment and control respondents, and a majority in each group identified budget limitations (57% treatment, 57% control) and high initial costs (53% treatment and 55% control) as challenges. A substantial number of respondents in both groups also reported a lack of understanding about incentive eligibility (33% treatment and 41% control), while very few said they did not face any challenges (5% treatment, 7% control).

Respondents who identified challenges to making energy efficiency improvements were asked how Georgia Power could help them overcome those challenges. Sixty-eight treatment respondents and 43 control respondents offered suggestions, which the evaluation team coded into a total of 64 suggestions across five categories.

Education, Training and Advice

"Maybe send educational documents…"

"Send us educational info." (Treatment)

"Be fair with pricing. Educate!" (Control)

Treatment respondents most commonly suggested that Georgia Power provide more information and explanation on how to save energy (22%), while control respondents suggestions were more evenly spread out amongst other categories like reducing costs and education about rebates.

Save Energy

"Explain ways to save energy." (Treatment)

"Reduce the cost of energy as much as possible." (Treatment)

"Give us some information and ways to become more energy efficient business." (Control)

Costs and Rebates

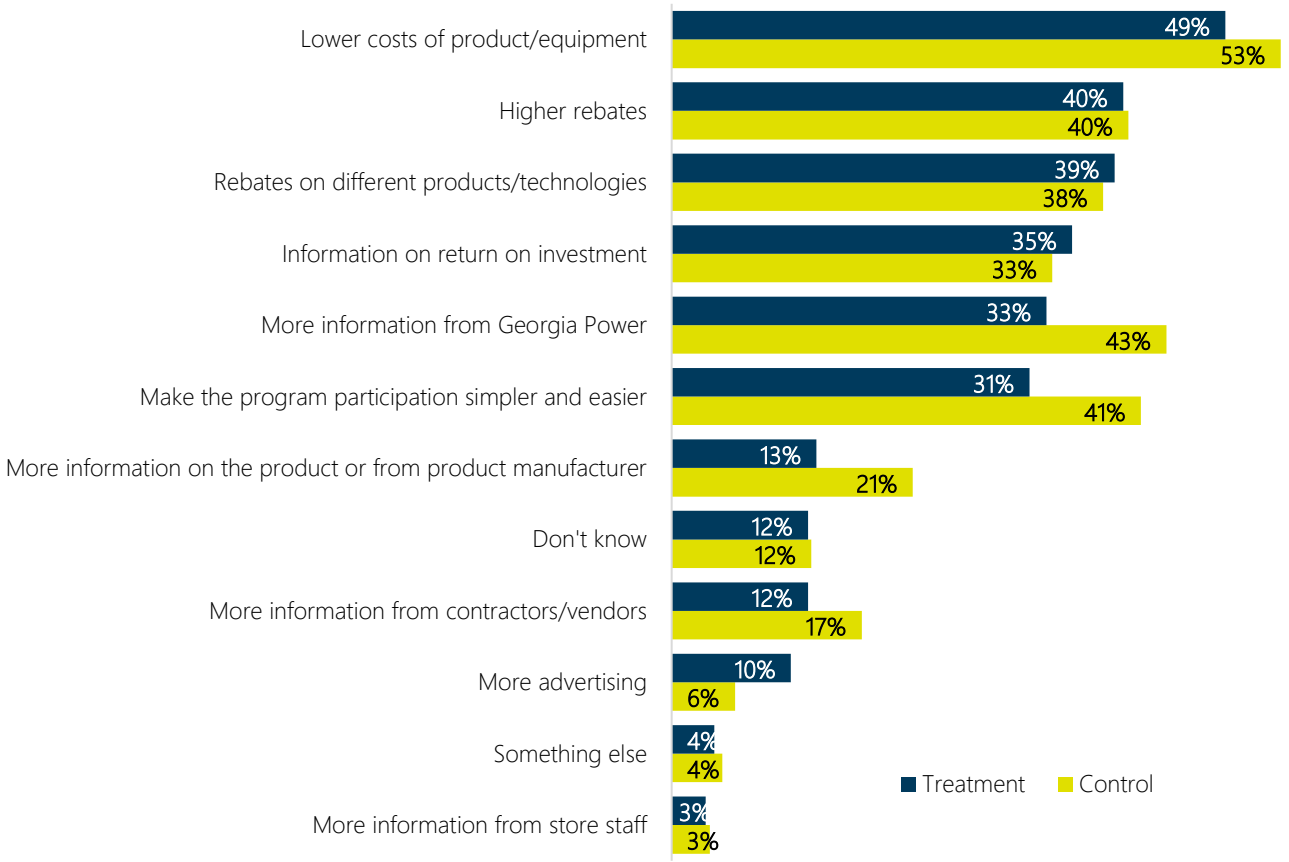
"Let me know what items are causing such high power bills and ways to reduce that cost." (Treatment)

"Reduce the rate." (Control)

"Give customers ways to be able to lower energy costs." (Treatment)

Most treatment (49%) and control (53%) respondents reported that lower equipment costs would motivate them to purchase more energy-efficient equipment, as well as higher rebates (40% treatment, 40% control). Providing more information about return on investment was also among the most mentioned motivations for both groups. Control respondents were more likely than those in the treatment group to report that more information from Georgia Power (43%) would motivate them. In both groups, respondents said that information from Georgia Power was more motivating than information from manufacturers, contractors, vendors, store staff, and advertising (Figure 4-18).

Figure 4-18. Motivations to Make More Energy-Efficient Upgrades



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q16. "What would motivate your business to make more energy-efficient purchases or upgrades on current equipment? Please check all that apply. [LIST OF ITEMS]" Treatment n=265; Control n=175.

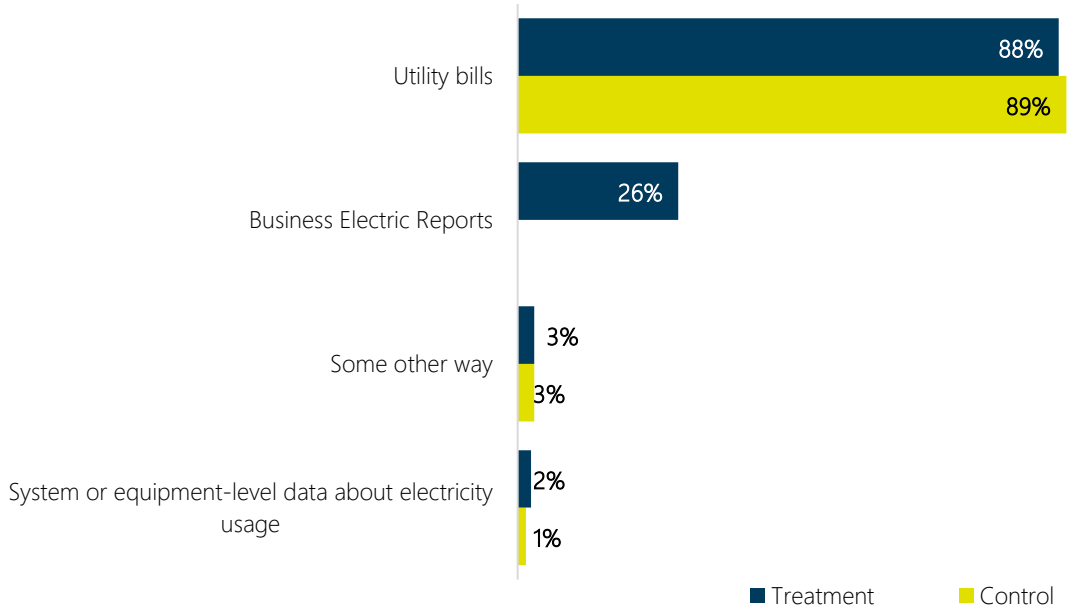
The evaluation team asked respondents who said more information from Georgia Power would motivate them to make energy-efficient upgrades to specify the kind of information they were seeking. Additional information about costs versus benefits followed by programs and rebates available were the most common response from both groups.

The evaluation team asked respondents who said rebates for different equipment would motivate them to make energy-efficient upgrades to specify equipment for which they would like to receive rebates. Both treatment and control respondents mentioned solar power, HVAC equipment, and specific equipment for their business (computers, welders, refrigeration etc.).

Most respondents from both groups reported that they track facility electricity usage using their utility bills (Figure 4-19). However, treatment respondents who read their BERs (78%) were significantly less likely to rely

on utility bills than control respondents (89%), and a quarter of all treatment respondents used BERs to track electricity use at their facilities (24%). Few respondents from either group track their electricity use at the level of individual pieces of equipment or systems (2% treatment, 1% control).

Figure 4-19. Tracking Facility Electricity Use



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q1. "Please select the statements that describe how you track information about electricity use at your facility." Treatment n=192; Control n=149. Percentages may total to more than 100% because multiple responses were accepted.

4.6 Conclusions and Recommendations

This section presents the evaluation team's conclusions and recommendations for the Commercial Behavioral program based on the treatment and control group survey. While this program is in its second program cycle, the treatment and control groups were redesigned. Given that savings from behavioral programs tend to slowly increase over time and take one to two years to establish a steady state, the evaluation results may be more reflective of a program in its early stages.

Conclusion 15: Treatment customers found BERs useful, accurate and containing relevant business comparisons and the reports spurred positive energy efficiency actions and attitudes toward Georgia Power. Despite the encouragement to make energy efficiency actions, the treatment group did not report making energy efficiency upgrades at a more significant rate than the control group.

Respondents in both groups reported that they made energy-efficient upgrades and improvements in the past year: 55% treatment (n=118) and 43% control (n=74) however this difference was not significant. The

types of equipment they installed or upgraded were also similar, with approximately three-quarters of respondents in each group making lighting upgrades.

Most treatment respondents strongly or somewhat agreed that the BERs are helpful (91%), easy to understand (85%), and provide accurate usage information (85%). Additionally, for 40% of treatment respondents who made upgrades, BERs were very important in their decision to make energy-saving upgrades. Lastly, treatment respondents were significantly more satisfied than control respondents with Georgia Power overall (average of 6.9 vs 5.9).

Respondents were less prone to agree that the BERs contained accurate comparisons to similar facilities (70%), that their company has followed tips from the BERs (62%), and only a minority agreed that they have installed recommended products (35%).

Conclusion 16: The new Energy Portal fostered awareness and interest in energy-efficient practices.

Most respondents used utility bills to track their energy use (88%) and treatment respondents found being able to see their energy itemization on their bill most useful (60%). The average satisfaction with the portal was a 7.5/10 with 56% of treatment respondents using the portal. Finally, Energy Portal users and report readers were more aware of Georgia Power programs and found energy efficiency more important for their business.

> Recommendation 16: Explore whether the portal can include more comparisons of similar businesses as suggested by participants. Additionally, include portal data in the BERs to encourage visits to the portal and track portal use.

Conclusion 17: As noted in the prior evaluation, the BERs have a significant impact on customer satisfaction and knowledge empowerment for customers who regularly read their reports. Treatment respondents, whether they regularly read their BERs or not, had higher overall satisfaction with Georgia Power. Treatment respondents who read BERs regularly indicated significantly higher levels of knowledge about saving energy.

Treatment respondents had higher overall satisfaction with Georgia Power than control respondents. Interestingly, treatment respondents who did not read BERs regularly had significantly higher overall satisfaction with Georgia Power (8.3, n=17) than control respondents (7.0, n=62). Regular BER readers also rated their knowledge of how to save energy higher (5.6, n=43) than the other groups (treatment who do not read BERs 4.8, n=24 and control 5.1, n=98).

Treatment respondents who read BERs overall gave significantly higher ratings for the importance of reducing energy costs compared to control respondents. Those who read the BER were significantly more likely than control respondents to say that they had made energy-efficient upgrades/improvements.

> Recommendation 17: Leverage the connectivity between the BERs and the Energy Portal and Georgia Power website to ensure that linkages to program incentives are consistent and complementary.

Conclusion 18: Although the Commercial Behavioral program in the 2023 program year did not yield statistically significant direct energy savings, the program demonstrated a positive contribution to cross-program participation and uplift savings, indicating its value as an engagement, education, and communication tool for the program portfolio.

The evaluation team found no statistically significant treatment effect from the billing analysis using 12 months of pre- and post-treatment data. The difference-in-differences model showed a small, non-significant decrease in energy consumption (p-value 0.76), while the post-only model suggested a non-significant increase (p-value 0.83). Given the high uncertainty of these estimates, it is inappropriate to assign verified savings, resulting in a realization rate of 0%.

Uplift savings, the additional energy savings achieved through cross-program participation, were 2.4 kWh per customer, totaling 87,104 kWh. Participation in the Commercial Behavioral program increased enrollment in other energy efficiency programs by 16% compared to the control group.

> Recommendation 18: Leverage the BERs to focus on energy savings opportunities through Geogia Power's existing programs to emphasize cross-participation over individual energy-savings actions.
>
> A very large share of program treatment participants found the business energy reports to be helpful, drove participation in the other certified programs, and increased satisfaction with Georgia Power; consequently, Georgia Power should consider continuing the program for non-energy savings reasons. One large hurdle is the current policy to critique cost-effectiveness at the program-level. The company may wish to consider the commercial portfolio from a holistic and synergistic perspective and either consider cost-effectiveness at the sector level and/or consider aggregating delivery streams under one program umbrella.

5 Commercial Hours of Use Lighting Study

5.1 Introduction

Alongside the evaluation of 2023 Commercial DSM programs, the evaluation team completed a commercial lighting HOU study[28]. The intent of this study is to improve the accuracy of the 2023 program evaluations and to inform future program implementation. Key goals of the study were to:

- Determine the lighting annual HOU for common commercial building types for Georgia Power businesses,
- Calculate unique load shapes for lighting technologies and common commercial building types, and
- Estimate the lighting CFs with system peak hour(s) for common commercial building types.

This study includes 204 premise-level and 465 measure-level measurements from Georgia Power DSM Commercial program participants sampled within the 2023 program evaluation as outlined in Table 5-1. Measurements collected from Prescriptive program lighting projects represented large and medium size businesses and measurements from the SCDI program represented small business operating characteristics. Measurements taken for the HOU study were also included in the evaluations of the 2023 Prescriptive and Small Commercial programs to improve the accuracy of the results and provide a valuable key parameter for future program evaluations and future program implementation.

[28] July 29, 2022, Stipulation, Docket No. 44160, Georgia Power 2022 IRP and Docket 44161, Georgia Power DSM Application. Page 41, "*The Company will conduct a commercial lighting HOU study in the 2024 EM&V process and will apply those results, as determined by the evaluator, for future programs.*"

Table 5-1. 2023 Summary of Commercial Hours of Study Activities

Evaluation Activity	Prescriptive Program	SCDI Program
Premise Level Measurements	135 premises	69 premises
Measure Level Measurements	322 measures	143 measures
Cross-Cutting	Ten (10) business types	
Cross-Cutting	Five (5) lighting fixture types	

5.2 Methodology

The commercial lighting HOU data collection methodology aligns with the measurement section of the Commercial and Industrial lighting Evaluation Protocol, 2017 version, as practical[29].

5.2.1 Achieved Sample Size

Table 5-2 and Table 5-3 summarize the achieved sample sizes by business type and technology type for the commercial HOU study. Multiple data loggers were installed in most of the facilities, to capture a variety of technology types and appropriately weight multiple lighting operating schedules that exist in many buildings. Up to five different measurements were collected at each premise.

Table 5-2. Achieved Sample Size by Business Type

Business Type	Premise Locations	Prescriptive	SCDI	Technology Measurements	Measurements per Site
Education	26	23	3	79	3.0
Lodging/ Multi-family	16	16	0	31	1.9
Miscellaneous	20	7	13	49	2.5
Small Office	31	9	22	60	1.9
Large Office	19	19	0	39	2.1
Restaurant	14	10	4	32	2.3
Small Retail	25	11	14	56	2.2
Large Retail (Big Box)	13	12	1	26	2.0
University	15	15	0	30	2.0
Warehouse	25	13	12	63	2.5
Total	**204**	**135**	**69**	**465**	**2.3**

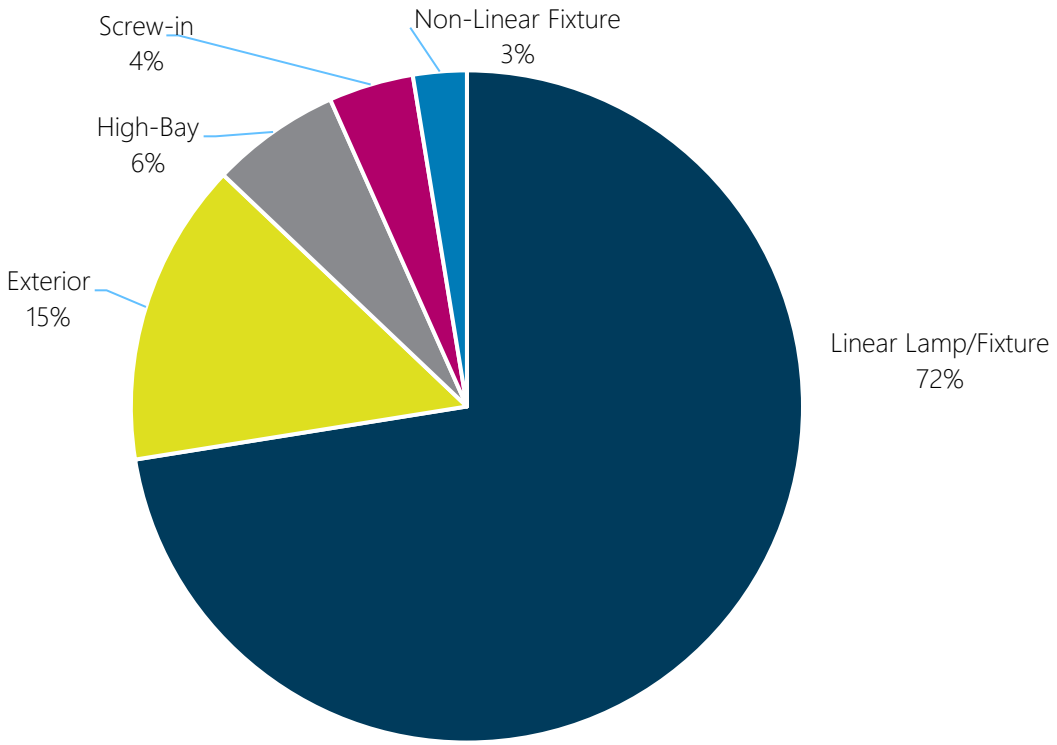
[29] Section 6, https://www.nrel.gov/docs/fy17osti/68558.pdf

Table 5-3. Achieved Sample Size by Technology Type

Key Metrics	Exterior	Non – Linear Fixture	High-Bay	Linear Lamp / Fixture	Screw-in Lamp	Total
Measurements	68	12	29	337	19	465

Figure 5-1 shows the share of lighting by technology type. Linear Lamp/Fixture is the largest single lighting type with 72% of the total measurements. Although less of the share, other lighting types, such as Exterior, High-Bay, Screw-in, and Non-Linear Fixture, comprised 28% of the total measurements.

Figure 5-1. Measurement Shares by Lighting Type



5.3 Data Collection

5.3.1 Recruitment

The evaluation team recruited Georgia businesses for inclusion in this study by reaching out to randomly selected participants in Georgia Power's Prescriptive and SCDI programs. The recruitment process is outlined as below:

- The evaluation team selected a random sample of Prescriptive and SCDI program participants for each business type.
- Sampled businesses were recruited to participate in the study via phone and/or email.
- Sampled businesses were offered a $50 incentive for participation in the study.
- Businesses that agreed to participate were scheduled with a specific field engineer with a date and time for a site visit.

5.3.2 Equipment and Installation

At each business, field engineers surveyed lighting equipment (fixture types and quantities) in the facility and installed data loggers to record lighting HOU. Engineers surveyed all lighting systems in the facility, both equipment that was incentivized through Georgia Power's programs and other unincentivized equipment. Engineers also interviewed site contacts for their reported lighting schedules for each zone of the facility, including seasonal variations. For extremely large facilities, engineers only surveyed a representative portion of the facility.

Site engineers installed Light On/Off loggers (Figure 5-2). For this study, over 400 On/Off loggers were installed, averaging 2-3 loggers at each facility. These loggers (models HOBO Light On/Off Data Logger UX90-002, U9-002) record timestamps each time the on/off status of the fixture changes. Each time the state changes from "off" to "on" a value of 1 is recorded and each time the state changes from "on" to "off" a 0 is recorded. Average values are then calculated from the recorded data to get a "percent on" value for each hour of the logging duration.

Figure 5-2. Light On/Off Logger

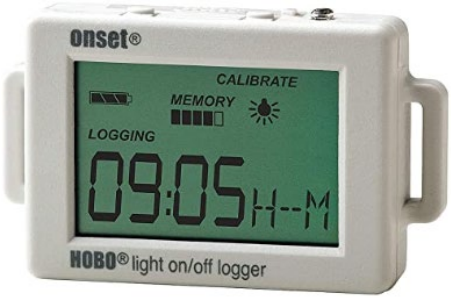


Figure 5-3 shows a logger installed on a linear fixture in an office lobby as an example.

Figure 5-3. Installed Logger on Office Linear Fixture

Engineers checked and confirmed logger calibration at the time of logger installation. Logger placement preference was given to the participating equipment (for evaluation purposes) and the most common space types within the facility. Upon installation, site contacts were reminded of the duration of the logger study and briefed on anticipated logger retrieval timing.

5.3.3 Logger Retrieval

Data loggers were left in place for a period of at least 28 days, as recommended by the DOE UMP Commercial and Industrial Lighting Evaluation Protocol[30], or longer. On average, loggers were left on-site at the facility for 47 days. Field engineers returned to each site for logger retrieval with the documentation from the original site visit. A high retrieval rate, upwards of 95%, was achieved for this study with only 5% of loggers found to be missing or misplaced during the pickup visit. Upon retrieval, data from each logger was downloaded and organized for analysis.

[30] Section 6, https://www.nrel.gov/docs/fy17osti/68558.pdf

5.4 Data Quality

Adjustments to recorded logger data are necessary to ensure consistency in the analysis across all sampled projects. Examples of adjustments that were applied in the recorded data are:

- Time Zone: Loggers were deployed during both Daylight Savings time and Standard Time periods. The evaluation team took care to ensure that all data was adjusted to Eastern Prevailing Time.
- Logger Launch/Removal Time Periods: Observations from logger install and pickup dates were discarded to ensure that partial days do not bias results.
- Measurement Irregularities: Logger results showing extended periods with either 0% or 100% operation were analyzed on a case-by-case basis to determine whether they should be discarded. Periods of outage due to inclement weather were discarded.
- Seasonality: For sites with reported seasonal variability, the evaluation team made manual adjustments to determine an appropriate annual HOU value. The most likely scenario that required this type of adjustment are education facilities with different summer hours. The timeframe of this study did not allow for data collection periods that covered the seasonal variation, so the evaluation team manually adjusted using the detailed operation schedule as reported by the customer.
- Holidays: Annual HOU were adjusted to account for the reported holiday schedule for each facility. If metering occurred over a holiday, the collected data was used to inform holiday usage patterns throughout the year. If the metering period did not include a holiday, the reported holiday usage schedule was applied.
- Lighting Controls: Fixtures with occupancy sensors were avoided when possible. For sites where all representative fixtures have additional lighting controls, logger data was manually adjusted to remove the effect of the controls from the HOU calculation. The measured HOU of lighting fixtures when lighting controls are present were adjusted by a deemed percentage as a function of the lighting control type (e.g. occupant sensor, daylight sensor, etc.). This analysis adjustment step is a typical practice within similar studies. It is noteworthy that the analysis calculators from the implementation contractor utilize a default HOU without lighting control adjustments and then have a distinct step to adjust the HOU lower for those participating customers with lighting controls. With this methodology, energy savings are not overstated for participants. Inclusion of lighting controls within the HOU estimates could double-count reductions within energy savings calculations. This adjustment only affected a small share of customer sites.

5.5 Analysis

The analysis for this study was performed using an Excel-based tool. Several site-specific inputs are required in addition to the hourly percent on readings. Figure 5-4 shows an excerpt from the input section of the analysis tool. Inputs include:

- Installation Date and Time

- Removal Date and Time
- Logger Location
- Business Type
- Lamp Type
- Connected Load
- Hourly readings

Figure 5-4. Analysis Tool

Hours of Operation:	2,694
Summer Coincident:	12.0%
Winter Coincident:	76.0%
Logger ID:	B
Logger Number:	10168415
Business Type:	Education
Location Description:	Library Window Frame
Installation Date:	2/8/2024 12:00
Removal Date:	3/18/2024 13:00
Part of Retrofit [Y/N]:	Yes
Occupancy Sensor [Y/N]:	No
Air Conditioned [Y/N]:	Yes
Heating Type:	Heat Pump
Lamp Type:	Linear Lamp / Fixture
Connected Load [W]:	51,300
Holidays Apply [Y/N]:	Yes
Weeks Per Year	52.1

Logger Time Stamp	% ON
2/9/2024 6:00	0
2/9/2024 7:00	91.667
2/9/2024 8:00	100
2/9/2024 9:00	100
2/9/2024 10:00	100
2/9/2024 11:00	100
2/9/2024 12:00	100
2/9/2024 13:00	100
2/9/2024 14:00	100
2/9/2024 15:00	100
2/9/2024 16:00	0

Analysis was performed for each facility separately incorporating all loggers deployed at the facility. The site-specific analyses were then combined and summarized by business type. Within each facility and building type, HOU and CF results were weighted by connected load associated with each logger result. Connected load is the total power, in watts, of all lamps associated with the schedule recorded by the data logger. The percentage of connected load that each measurement contributes to the total connected load is applied to generate weighted results for HOU and both winter and summer CF.

Peak CFs for each building type were calculated using the peak period definition(s) provided by Georgia Power. For this study, the specific hours within the peak period definition, illustrated in Figure 5-5, are July

weekdays from 4-5 p.m. and January weekdays from 8-9 a.m., excluding holidays. For each period, the CF is calculated as the average percentage on during the peak hours. The aggregated CF for each building type is also weighted using connected load.

Figure 5-5. Example 192-Hour Operation Schedule

Day Type	% On During Each Hour of Day																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Sun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mon	0	0	0	0	0	0	0	51	86	100	99	100	100	92	100	100	93	50	26	0	0	0	0	0
Tue	0	0	0	0	0	0	5	50	93	96	100	100	92	92	100	100	97	85	85	20	0	0	0	0
Wed	0	0	0	0	0	0	0	54	86	100	93	100	95	93	99	100	89	46	26	0	0	0	0	0
Thu	0	0	0	0	0	0	10	55	79	98	100	100	88	91	95	100	84	45	25	0	0	0	0	0
Fri	0	0	0	0	0	0	0	55	79	100	100	100	85	97	100	100	80	48	23	0	0	0	0	0
Sat	0	0	0	0	0	0	0	50	80	100	100	100	84	80	20	20	20	20	20	0	0	0	0	0
Hol	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.6 Margin of Error

As with any survey or statistical analysis, the results of this study are subject to a degree of uncertainty. When using a sample to make predictions about a population, factors of uncertainty are introduced, primarily based on the size of the sample and the existence of biases within the sample. With considerations for sample size, more general findings will have the highest precision, while the precision decreases as results become more specific (i.e. HOU for a specific equipment type and building type).

The margin of error was estimated for study outputs including HOU and CF using appropriate statistical formulas.

Equation 5-1. Margin of Error

$$Margin\ of\ Error = z * \frac{\sigma}{\sqrt{n}}$$

Where:

z = 1.645 for 90% confidence
σ = standard error
n = sample size

5.7 Results

5.7.1 Hours of Use

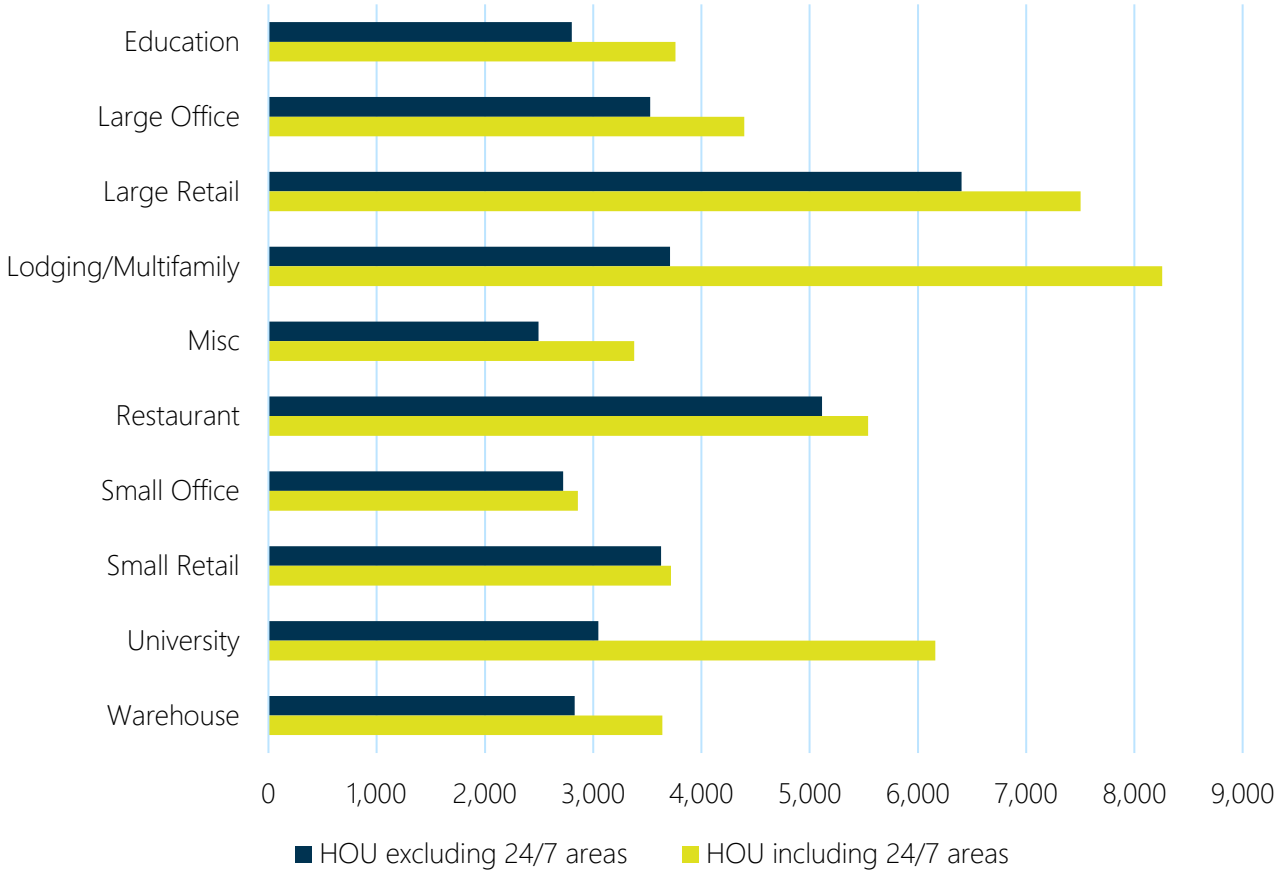
Table 5-4 and Figure 5-6 list the weighted annual HOU results by business type. Results are provided with 24/7 fixtures included and excluded, to illustrate the impact that 24/7 lighting has on overall average HOU. Space types with higher shares of 24/7 lighting include Large Retail, Lodging/Multifamily, and University business types, resulting in the more significant difference between the two results for those space types.

Table 5-4 also shows the achieved precision interval for each sampled business type.

Table 5-4. Hours of Use Results by Business Type

Business Type	HOU *excluding 24/7 areas*	HOU *including 24/7 areas*	Precision at 90% CI
Education	2,802	3,759	10%
Large Office	3,527	4,396	12%
Large Retail	6,402	7,504	8%
Lodging/Multifamily	3,710	8,258	11%
Misc	2,496	3,379	9%
Restaurant	5,114	5,539	10%
Small Office	2,723	2,859	10%
Small Retail	3,628	3,719	8%
University	3,047	6,159	14%
Warehouse	2,828	3,640	6%

Figure 5-6. Hours of Use Results by Business Type



5.7.2 Coincidence Factor

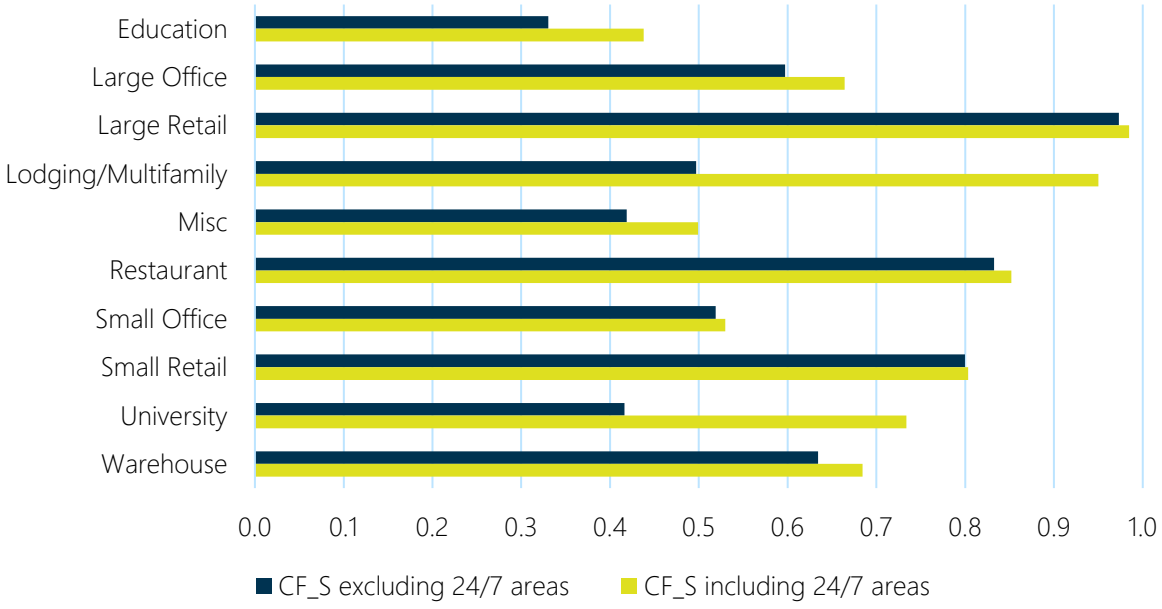
5.7.2.1 Summer Coincidence Factor

Table 5-5 includes the weighted annual summer CF estimates by business type. Results are provided including and excluding 24/7 fixtures. Figure 5-7 provides a visual representation of the results in Table 5-5. Large Retail and Restaurant business types result in the highest CFs, indicating a more consistent lighting load during the summer peak period of 4-5 p.m.

Table 5-5. Coincidence Factors by Business Type

Business Type	CF_S *excluding 24/7 areas*	CF_S *including 24/7 areas*
Education	0.33	0.44
Large Office	0.60	0.66
Large Retail	0.97	0.98
Lodging/Multifamily	0.50	0.95
Misc	0.42	0.50
Restaurant	0.83	0.85
Small Office	0.52	0.53
Small Retail	0.80	0.80
University	0.42	0.73
Warehouse	0.63	0.68

Figure 5-7. Comparison of Coincidence Factors by Business Type



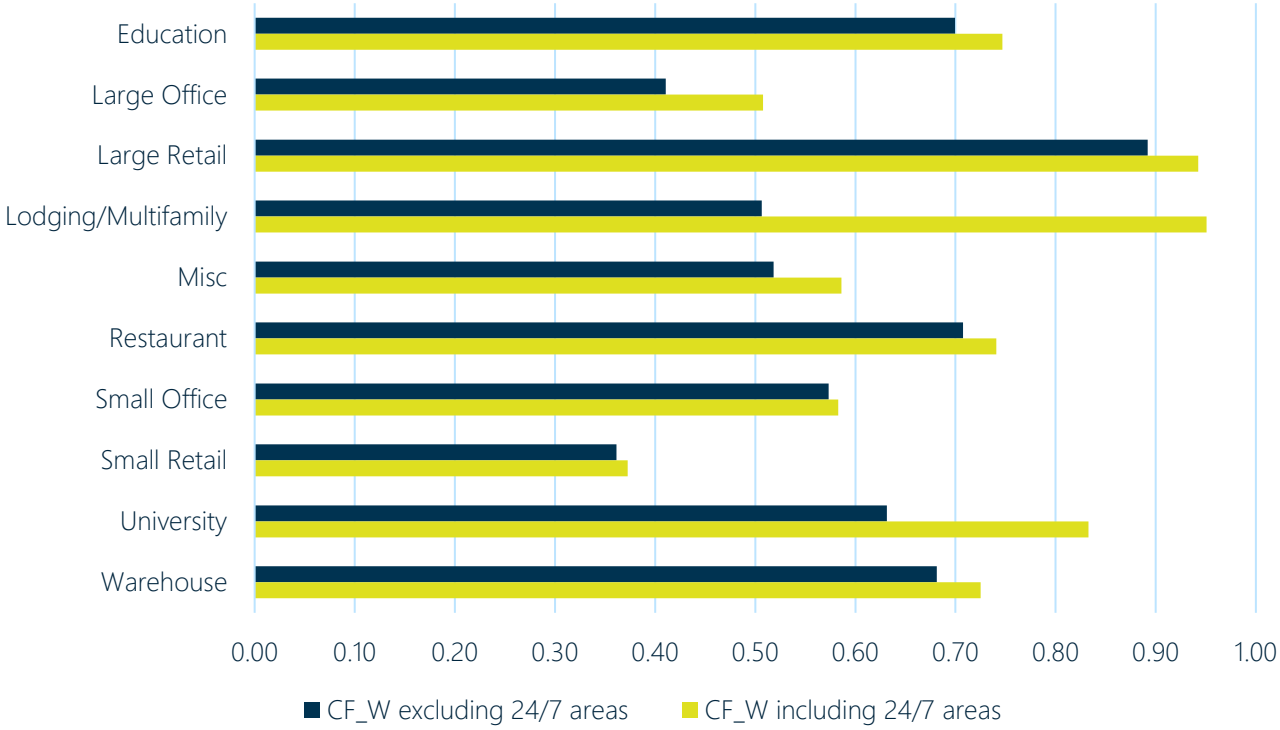
5.7.2.2 Winter Coincidence Factor

Table 5-6 includes the weighted annual winter coincidence factor (CF_W) estimates by business type. Results are provided including and excluding 24/7 fixtures. Figure 5-8 provides a visual representation of the results in Table 5-6 for comparison. Winter CFs are generally higher than summer coincidence factors (CF_S), indicating the majority of business types have a lighting load between the hours of 8-9 a.m.

Table 5-6. Winter Coincidence Factor by Business Type

Business Type	CF_W *excluding 24/7 areas*	CF_W *including 24/7 areas*
Education	0.70	0.75
Large Office	0.41	0.51
Large Retail	0.89	0.94
Lodging/Multifamily	0.51	0.95
Misc	0.52	0.59
Restaurant	0.71	0.74
Small Office	0.57	0.58
Small Retail	0.36	0.37
University	0.63	0.83
Warehouse	0.68	0.73

Figure 5-8. Comparison of Winter Coincidence Factor by Business Type



5.7.3 Results by Technology Type

Table 5-7 lists the weighted annual HOU results by technology type. Results are provided with 24/7 fixtures included and excluded, to illustrate the impact that 24/7 lighting has on overall average HOU. When excluding 24/7 areas, high bay fixtures have the highest usage on average.

Table 5-7. Hours of Use Results by Technology Type

Technology Type	HOU *excluding 24/7 areas*	HOU *including 24/7 areas*
LED Linear	2,402	4,583
LED Exterior	3,393	5,286
LED High bay	3,758	5,577
LED Screw-in	2,085	5,892
LED Non-Linear Fixture	1,567	7,458

Table 5-8 lists results for winter and summer peak CFs by technology type. Exterior fixtures do not contribute to the load at those times, except for 24/7 fixtures.

Table 5-8. Summer Coincidence Factor and Winter Coincidence Factor by Technology Type

Technology Type	CF_S *excluding 24/7 areas*	CF_S *including 24/7 areas*	CF_W *excluding 24/7 areas*	CF_W *including 24/7 areas*
LED Linear	0.49	0.62	0.63	0.72
LED Exterior	0.00	0.22	0.00	0.22
LED High bay	0.78	0.82	0.80	0.84
LED Screw-in	0.57	0.76	0.71	0.84
LED Non-Linear Fixture	0.57	0.86	0.60	0.87

5.8 Benchmarking

To provide context and comparison, results of this study were benchmarked against the current program HOU assumptions as well as similar values published in TRMs from other jurisdictions.

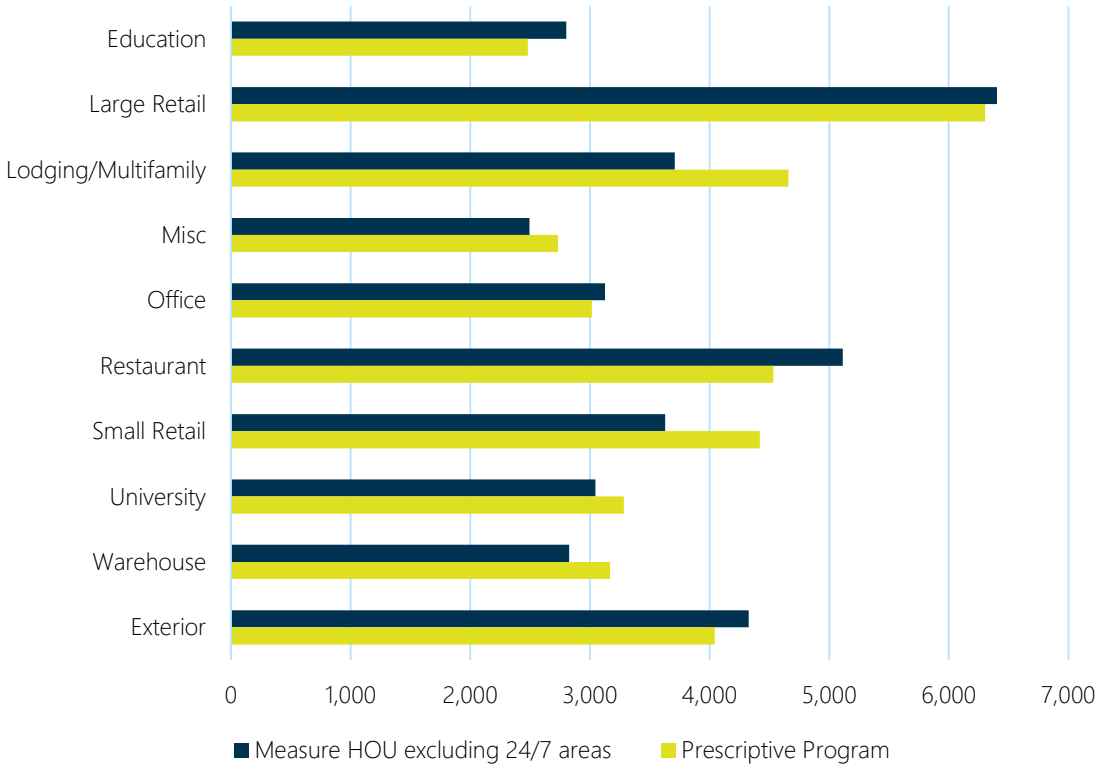
5.8.1 Comparison with Implementer Assumptions

Table 5-9 and Figure 5-9 compare the current HOU values in use by the Prescriptive program implementation team against the results of this study. The program uses a different set of business types, so the evaluation team used some judgement to select the most similar equivalents for comparison. It should be noted that the measured HOUs are those HOUs from the study excluding 24/7 fixtures. Measured HOUs are within ± 20% of the program's HOU values for all business types. Large Retail and Offices are within 5% of the reported values while Small Retail and Lodging/Multifamily HOUs are overreported by ~20%.

Table 5-9. Prescriptive Program Assumptions vs Measured Hours of Use

Business Type	Prescriptive Program HOU	Measured HOU *excluding 24/7 areas*	% Difference
Education	2,483	2,802	13%
Large Retail	6,305	6,402	2%
Lodging/Multifamily	4,660	3,710	-20%
Misc	2,732	2,496	-9%
Office[31]	3,016	3,125	4%
Restaurant	4,532	5,114	13%
Small Retail	4,420	3,628	-18%
University	3,283	3,047	-7%
Warehouse	3,170	2,828	-11%
Exterior	4,045	4,328	7%

Figure 5-9. Prescriptive Program Assumptions vs Measured Hours of Use



[31] Large Office and Small Office HOUs are averaged and compared to the reported "Office" business type.

5.8.2 Comparison with Other Benchmarks

The measured HOUs are additionally benchmarked against industry standard commercial TRMs. The Illinois, Pennsylvania, and Arkansas TRMs are chosen for comparison. Business types are matched accordingly to the study business types. Table 5-10 and Figure 5-10 include the measured HOUs and TRM HOUs for comparison.

Table 5-10. Comparison TRMs vs Measured Hours of Use

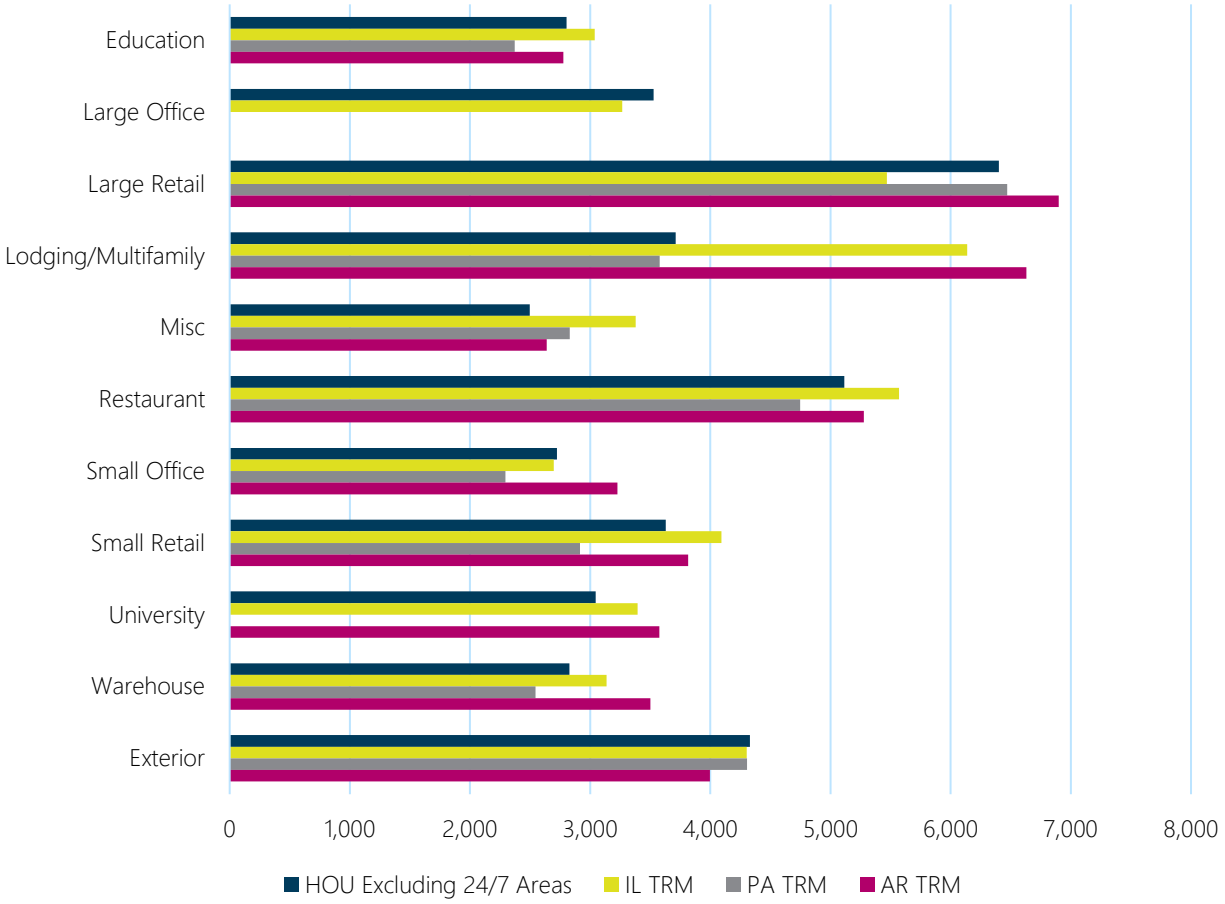
Business Type	Measured	IL TRM[32]	PA TRM[33]	AR TRM[34]
Education	2,802	3,038	2,371	2,777
Large Office	3,527	3,266	N/A	N/A
Large Retail	6,402	5,468	6,471	6,900
Lodging/Multifamily	3,710	6,138	3,579	6,630
Misc	2,496	3,379	2,830	2,638
Restaurant	5,114	5,571	4,747	5,278
Small Office	2,723	2,698	2,294	3,227
Small Retail	3,628	4,093	2,915	3,817
University	3,047	3,395	N/A	3,577
Warehouse	2,828	3,135	2,545	3,501
Exterior	4,328	4,303	4,306	3,996

[32] 2024 Illinois Statewide Technical Reference Manual Version 12.0, vol. 2, 4.5 Lighting End Use, pg. 683-684

[33] 2021 State of Pennsylvania Technical Reference Manual, vol. 3, 3.1 Lighting – Table 3-6, pg. 9

[34] 2022 Arkansas Technical Reference Manual Version 9.1, vol. 2, 3.6.3 Lighting Efficiency – Table 399, pg.436

Figure 5-10. Comparison TRMs vs Measured Hours of Use



5.9 Conclusions and Recommendations

Conclusion 19: Measured HOU values determined through this study are reasonably well aligned with the current assumptions in use by the Prescriptive program and values in use in other jurisdictions.

Conclusion 20: 24/7 lighting is a larger share of the population than expected for certain business types, at 86% of lodging/multifamily common areas and 46% of large retail.

Conclusion 21: Achieved precision intervals were near or less than 10% for all business types in this study. Business types have relative precisions ranging from ± 6% for Warehouses to ±14% for Universities, with an average of 7%.

> Recommendation 21a: For all business types except Lodging/Multifamily Common Areas, adopt HOU results excluding 24/7 areas for estimating program savings and program planning purposes going forward. Consider assigning a measure-specific HOU schedule when lighting is known to be used 24/7.

Recommendation 21b: For Lodging/Multifamily Common Areas, given the high percentage of 24/7 lighting in these areas, adopt HOU results including 24/7 areas for estimating program savings and program planning purposes going forward.

6 Cost Effectiveness

This section considers program cost-effectiveness in terms of the Total Resource Cost test (TRC), the Ratepayer Impact Test (RIM), the Program Administrator Cost test (PAC), and the levelized program delivery costs.

6.1 Methodology

The evaluation team completed a benefit-cost analysis to compare the value of the gross verified savings impacts resulting from the DSM programs to the costs incurred by the programs. The evaluation team utilized net verified energy and demand savings for the calculation of avoided cost benefits, consistent with the values from the most recent DSM program filing[35]. The calculation of cost effectiveness components including: additional resource savings, incremental equipment and installation costs, program administrative costs, incentive payments, and bill savings, were generated by Georgia Power with review by the evaluation team.

Table 6-1 summarizes the allocation of cost effectiveness components as a cost or benefit to each cost effectiveness test consistent with the California Standard Practice Manual (SPM).

[35] https://psc.ga.gov/search/facts-docket/?docketId=44161

Table 6-1. Cost Effectiveness Component Inputs

Component	Program Administrator Cost Test (PACT)	Ratepayer Impact Measure (RIM)	Total Resource Cost (TRC)
Energy & Capacity Related Avoided Costs	Benefit	Benefit	Benefit
Additional Resource Savings			Benefit
Incremental Equipment and Installation Costs			Cost
Program Admin Costs	Cost	Cost	Cost
Incentive Payments	Cost	Cost	
Bill Savings/Lost Revenues		Cost	

Benefits and costs are stated in present value terms, using the appropriate discount and inflation rates.

6.1.1 Total Resource Cost (TRC)

The TRC test measures the net costs of a program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. In general, it is the ratio of the discounted total benefits of the program to the discounted total costs over a specified time period. A benefit-cost ratio greater than one indicates that the program is beneficial to the utility and its ratepayers on a TRC basis.

The benefits calculated in the TRC test are the avoided supply costs, the reduction in transmission, distribution, generation, and energy costs valued at marginal cost for the periods when there is a load reduction. The costs associated with this test are the net programs costs paid by both the utility and the participants; this includes administration costs, non-free-rider equipment costs, and free-rider incentives.

In algebraic form:

$$Benefits = \sum_{t=1}^{n} \frac{UAC_t}{(1+d)^{t-1}}$$

$$Costs = \sum_{t=1}^{n} \frac{PRC_t + PCN_t}{(1+d)^{t-1}}$$

$$TRC\ Ratio = \frac{Benefits}{Costs}$$

Where:

UACt = Utility (electric and gas) net avoided supply costs in year t

PRCt = *Program administrator program costs in year t*

PCNt = *Net participant costs (equipment costs) in year t*

d = *Nominal discount rate*

6.1.2 Program Administrator Cost (PAC)

The PAC test measures the net costs of a program as a resource option based on the costs incurred by the program administrator and excluding any net costs incurred by the participant. A benefit to cost ratio above one indicates that the program would benefit the administrator's cost environment.

Similar to the TRC test, the benefits calculated in the PAC test are the avoided supply costs of energy and demand. However, the net avoided supply costs for the PAC test include only the avoided costs of supplying electricity, not the avoided societal costs of natural gas, propane, or water. The costs associated with this test are the program costs incurred by the administrator and the incentives paid to the customers.

In algebraic form:

$$Benefits = \sum_{t=1}^{n} \frac{UAC_t}{(1+d)^{t-1}}$$

$$Costs = \sum_{t=1}^{n} \frac{PRC_t + INC_t}{(1+d)^{t-1}}$$

$$PAC\ Ratio = \frac{Benefits}{Costs}$$

Where:

UACt = *Utility net avoided supply costs in year t*

PRCt = *Program administrator program costs in year t*

INCt = *Incentives paid to participants in year t*

d = *Nominal discount rate*

6.1.3 Ratepayer Impact Measure Test (RIM)

The RIM test measures what happens to customer bills or rates due to changes in utility revenues and operating costs caused by the program. This test adopts the perspective of all ratepayers, including program participants and nonparticipants. In general, the test is the ratio of the discounted total benefits of the

program to the discounted totals costs over a specified time period. A benefit-cost ratio above one indicates that the program is beneficial to the customers.

The benefits calculated in the RIM test are the avoided supply costs, the reduction in transmission, distribution, generation, and energy costs valued at marginal cost for the periods when there is a load reduction. The costs associated with this test are the gross incentive costs of the program, the net bill reductions experienced by participants (which can be thought of as the lost revenue to the utility from implementing the conservation program), and the program administration costs.

In algebraic form:

$$Benefits = \sum_{t=1}^{n} \frac{UAC_t}{(1+d)^{t-1}}$$

$$Costs = \sum_{t=1}^{n} \frac{RL_t + PRC_t + INC_t}{(1+d)^{t-1}}$$

$$RIM\ Ratio = \frac{Benefits}{Costs}$$

Where:

UACt = *Utility avoided supply costs in year t*

RLt = *Revenue loss from reduced sales in year t*

PRCt = *Program administrator program costs in year t*

INCt = *Incentives paid to participants in year t*

d = *Nominal discount rate*

6.1.4 Levelized Delivery Cost

Leveling the delivery costs of each initiative is a useful way to express the program delivery costs per unit of energy or capacity savings. Levelized delivery costs are useful when comparing programs within a DSM portfolio.

Initiative delivery costs are the sum of program administrator costs and incentives paid to the participants. To level these costs for energy and demand savings, the following formula is used:

$$Levelized\ Delivery\ Costs = \frac{Delivery\ Costs}{\sum_{t=1}^{n} \frac{Q_t}{(1+d)^{t-1}}}$$

Where:

Qt = Energy or capacity savings in year t

d = Nominal discount rate

6.2 Commercial Portfolio

Table 6-2 summarizes the results of the cost effectiveness assessment for the Commercial Portfolio. It is notable that the entire commercial portfolio is cost-effective from a TRC perspective.

Table 6-2. 2023 Commercial Portfolio Cost-Effectiveness

Metric	Value
Program Administrator Cost (PAC)	
PAC Costs	($26,070,109)
PAC Benefits	$75,859,976
PAC Net Benefits ($)	$49,789,867
PAC Net Benefit (Ratio)	2.9
Ratepayer Impact Measure (RIM)	
RIM Costs	($174,102,243)
RIM Benefits	$75,859,976
RIM Net Benefits ($)	($98,242,267)
RIM Net Benefit (Ratio)	0.4
Total Resource Cost (TRC)	
TRC Costs	($57,687,073)
TRC Benefits	$75,869,888
TRC Net Benefits ($)	$18,182,815
TRC Net Benefit (Ratio)	1.3
Levelized Delivery Cost	
$/MWh	$39.55

6.3 Custom Program

Table 6-3 summarizes the results of the cost effectiveness assessment for the Custom Program.

Table 6-3. 2023 Custom Program Cost-Effectiveness

Metric	Value
Program Administrator Cost (PAC)	
PAC Costs	($5,802,810)
PAC Benefits	$24,380,483
PAC Net Benefits ($)	$18,577,673
PAC Net Benefit (Ratio)	4.2
Ratepayer Impact Measure (RIM)	
RIM Costs	($56,124,392)
RIM Benefits	$24,380,483
RIM Net Benefits ($)	($31,743,910)
RIM Net Benefit (Ratio)	0.4
Total Resource Cost (TRC)	
TRC Costs	($17,047,999)
TRC Benefits	$24,380,483
TRC Net Benefits ($)	$7,332,484
TRC Net Benefit (Ratio)	1.4
Levelized Delivery Cost	
$/MWh	$39.35

6.4 Prescriptive Program

Table 6-4 summarizes the results of the cost effectiveness assessment for the Prescriptive Program.

Table 6-4. 2023 Prescriptive Program Cost-Effectiveness

Metric	Value
Program Administrator Cost (PAC)	
PAC Costs	($15,879,741)
PAC Benefits	$46,648,424
PAC Net Benefits ($)	$30,768,684
PAC Net Benefit (Ratio)	2.9
Ratepayer Impact Measure (RIM)	
RIM Costs	($102,726,859)
RIM Benefits	$46,648,424
RIM Net Benefits ($)	($56,078,435)
RIM Net Benefit (Ratio)	0.5
Total Resource Cost (TRC)	
TRC Costs	($35,471,988)
TRC Benefits	$46,648,542
TRC Net Benefits ($)	$11,176,554
TRC Net Benefit (Ratio)	1.3
Levelized Delivery Cost	
$/MWh	$34.27

6.5 Small Commercial Direct Install Program

Table 6-5 summarizes the results of the cost effectiveness assessment for the SCDI Program.

Table 6-5. 2023 Small Commercial Direct Install Program Cost-Effectiveness

Metric	Value
Program Administrator Cost (PAC)	
PAC Costs	($3,830,417)
PAC Benefits	$4,831,069
PAC Net Benefits ($)	$1,000,652
PAC Net Benefit (Ratio)	1.3
Ratepayer Impact Measure (RIM)	
RIM Costs	($14,693,850)
RIM Benefits	$4,831,069
RIM Net Benefits ($)	($9,862,781)
RIM Net Benefit (Ratio)	0.3
Total Resource Cost (TRC)	
TRC Costs	($4,609,945)
TRC Benefits	$4,840,864
TRC Net Benefits ($)	$230,919
TRC Net Benefit (Ratio)	1.1
Levelized Delivery Cost	
$/MWh	$79.45

6.6 Behavioral Program

Table 6-6 summarizes the results of the cost effectiveness assessment for the SCDI Program.

Table 6-6. 2023 Commercial Behavioral Program Cost-Effectiveness

Metric	Value
Program Administrator Cost (PAC)	
PAC Costs	($557,142)
PAC Benefits	$0
PAC Net Benefits ($)	($557,142)
PAC Net Benefit (Ratio)	0.0
Ratepayer Impact Measure (RIM)	
RIM Costs	($557,142)
RIM Benefits	$0
RIM Net Benefits ($)	($557,142)
RIM Net Benefit (Ratio)	0.0
Total Resource Cost (TRC)	
TRC Costs	($557,142)
TRC Benefits	$0
TRC Net Benefits ($)	($557,142)
TRC Net Benefit (Ratio)	0.0
Levelized Delivery Cost	
$/MWh	n/a

Appendix A Glossary

ACRONYMS

CF	Coincidence Factor
CV	Coefficient of Variation
DSM	Demand Side Management
EM&V	Evaluation, Measurement, and Verification
EUL	Effective Useful Life
FR	Free-Ridership
HIM	High Impact Measure
HVAC	Heating, Ventilating, and Air Conditioning
IDI	In-Depth Interview
IPMVP	International Performance Measurement and Verification Protocol
ISR	In-Service Rate
kW	Kilowatt
kWh	Kilowatt-Hour
LED	Light-Emitting Diode
LLF	Line Loss Factor
MSRP	Manufacturer Suggested Retail Price
M&V	Measurement and Verification
MW	Megawatt
MWh	Megawatt-Hour
NPV	Net Present Value
NTG	Net-to-Gross
NTGR	Net-to-Gross Ratio
PY	Program Year: e.g., 2023, from January 1, 2023 to December 31, 2023

RCT Randomized Control Trial

ROB Replace on Burnout

SO Spillover

TRC Total Resource Cost

TRM Technical Reference Manual

WACC Weighted Average Cost of Capital

Within the body of this report, there are several technical terms that require explanation. Additionally, some of the terms may appear to be similar at first review; however, they have a very different meaning. Terms such as "reported" and "verified" can easily be confused by the reader and are thus defined as following:

Attribution	The process of determining the percentage of a program's savings that are directly related to the programs influences. Its value is determined through the use of survey techniques, and the Attribution Survey used for this project can be found in the process evaluation report.
Baseline	The expected energy usage level of a specific measure or project before improvements are implemented. This becomes the comparison value for all energy savings calculations.
Deemed Savings	Amount of savings for a particular measure provided by documented and validated sources or reference materials. Often used when confidence is high for a specific measure, databases lack sufficient information, or costs of measurement and verification greatly outweigh the benefits.
Early Replacement	Refers to an efficiency measure or efficiency program that seeks to encourage the replacement of functional equipment before the end of its operating life with higher-efficiency units.
Free-rider	A participant who, on some level, would have acquired the energy efficiency measure regardless of the program influence. Determining free-ridership values is a large component in calculating the NTG ratio.
Gross Savings	Total amount of a parameter of interest (kWh or kW) saved by a project/program.
Net-to-Gross Ratio	A ratio value determined through the process of surveying decision makers who implemented projects in order to account for free-ridership and other attribution effects. The NTG ratio is multiplied by gross verified savings to produce net savings. (NTG is typically calculated for a statistically significant sample of projects and then extrapolated to the population as a whole)

Net Savings	Total amount of a parameter of interest (kWh, kW) saved by a program that is directly related to the program. It takes into account the realization rate, as well as results of the attribution analysis (free-riders), to provide a value of energy savings directly related to the program influence. Net Savings is calculated by multiplying the gross verified savings by the NTG ratio.
Participant Cost	The cost to the participant to participate in an energy efficiency program.
Participant Spillover	Additional energy efficiency actions taken by program participants as a result of program influence, but actions that go beyond those directly subsidized or required by the program.
Project	A single activity (lighting retrofit, refrigeration replacement, HVAC replacement, insulation install, etc.).
Program	A group of projects with similar technology characteristics that are installed in similar applications.
Realization Rate	A measure of the amount of verified saving for a project/program compared to the reported savings. It is defined as the ratio of Gross Verified Savings to Gross Reported Savings. *Realization Rate (%) = (Gross Verified Savings)/(Gross Reported Savings)*
Replace-on-burnout	A DSM measure is not implemented until the existing technology it is replacing fails or burns out. An example would be a unitary air conditioning rooftop unit being purchased after the failure of the existing rooftop unit at the end of its useful life.
Reported Savings	Savings calculated and reported by Georgia Power. This is also referred to as Ex-Ante savings.
Stratify	The process of breaking down a population of projects into groups with similar characteristics (technical, financial, size, location, etc.). This is used during population sampling and allows projects with greater uncertainty or higher budgets to be accurately weighted to assess their impact on a program.
Sub-Strata	The individual groups remaining once a population has been stratified.
Stipulated Savings	Same as Deemed Savings
Verified Savings	Savings determined by the evaluation team through the collection of data at on-site inspections, phone surveys, and engineering analysis. This also referred to as Ex-Post savings.

Appendix B Impact Evaluation Details

B.1 Presc/Custom Lighting Measures Savings Methodology

The evaluation team based its savings methodology on National Renewable Energy Laboratory (NREL) Uniform Methods Project (UMP) Commercial and Industrial Lighting Evaluation Protocol.[36] The energy and demand savings algorithms used were as follows:

$$\Delta kW = \left[(Qty \times Watts \times CtrlF)_{Base} - (Qty \times Watts \times CtrlF)_{Efficient}\right] * \frac{1\ kW}{1{,}000\ W}$$

$$\Delta kWh = HOU \times (1 + IF_{energy}) \times \Delta kW$$

$$\Delta kW_{Peak} = CF \times (1 + IF_{demand}) \times \Delta kW$$

Where:

Qty	=	Quantity baseline and installed/efficient lamps or fixtures
Watts	=	Rated wattage of baseline and installed/efficient equipment (varies by measure)
CtrlF	=	Control factor to account for reduced lamp operation in baseline and efficient condition because of occupancy controls, daylighting controls, etc.
HOU	=	Annual hours of use
IF	=	Interactive factor for energy and demand, to account for interactive impacts between the lighting project and the building's heating and cooling systems
CF	=	Summer or winter peak coincidence factor

Controls factors were applied to the baseline and efficient condition as appropriate, as shown in Table B-1.

Table B-1. Lighting Controls Factors

Control Type	Control Factor (CtrlF)
Light Switch	100%
Occupancy Sensor	76%
Daylighting Sensor	72%

[36] National Renewable Energy Laboratory. October 2017. *The Uniform Methods Project.* "Chapter 2: Commercial and Industrial Lighting Evaluation Protocol." Available at https://www.nrel.gov/docs/fy17osti/68558.pdf.

Interactive factors used for the evaluation of lighting projects are shown in Table B-2. These factors were developed using energy simulation modeling by facility type and heating system type (non-electric, heat pump, and electric resistance) using the Atlanta, GA weather station. Interactive factors for nonconditioned buildings are zero.

Table B-2. Interactive Factors for Energy and Demand, by Facility Type

Facility Type	IF_{energy}			IF_{demand}
	Non-Electric	Heat Pump	Electric Resistance	
Assembly	12%	-7%	-23%	27%
Education - Primary	9%	-9%	-30%	31%
Education - Secondary	9%	-7%	-21%	25%
Education - Community College	17%	-5%	-18%	27%
Education - University	21%	-4%	-14%	31%
Hospital	13%	-21%	-68%	8%
Hotel	21%	-6%	-21%	21%
Manufacturing - Light Industrial	9%	-3%	-10%	24%
Motel	6%	0%	0%	28%
Office - Small	7%	-4%	-11%	15%
Office - Large	6%	-7%	-21%	24%
Restaurant - Fast Food	4%	-4%	-14%	9%
Restaurant - Sitdown	10%	-11%	-36%	31%
Retail - Large	10%	-6%	-21%	28%
Retail - Small	3%	-3%	-11%	7%
Storage - Conditioned	11%	-9%	-28%	40%
Other	6%	-5%	-16%	19%
Non-Conditioned	0%	0%	0%	0%

Hours of use as well as summer and winter CF values were determined based on independent data collection for the evaluation sample. The evaluation team deployed loggers and collected site specific operating schedules through interviews with site contacts and review of publicly available operating hours. For CFs, the evaluation team determined what proportion of the time each installation location's operating hours were coincident with the seasonal system peaks. The system peak window was defined as follows:

- Winter - 8AM-9AM on January weekdays.
- Summer - 4PM-5PM on July weekdays.

Wattages for efficient equipment were determined through review of manufacturer specification sheets and Design Lights Consortium (DLC) listings for the specific products installed. Baseline wattages were developed by determining the appropriate baseline equipment and using associated wattages from the evaluation team's standard wattage table. The evaluation team's assignment of baseline equipment types included these adjustments for outdated technologies:

- Existing T12 fluorescent lamp baselines were corrected to T8-equivalent baseline wattages.
- Incandescent bulbs baselines were corrected to an EISA-compliant halogen-equivalent baseline.

B.2 Small Commercial Lighting Measures Savings Methodology

The evaluation team based its savings methodology on the Illinois Statewide TRM Version 11.0.[37] The resulting savings formulas are as follows:

Electric Energy Savings:

$$\Delta kWh = \left((Watts_{Base} - Watts_{EE})/1000\right) * HOU * WHF_e * ISR$$

Summer Coincidence Peak Demand Savings:

$$\Delta kW = \left((Watts_{Base} - Watts_{EE})/1000\right) * ISR * WHF_d * CF$$

Where:

$Watts_{Base}$	=	Input wattage of the existing (for early replacement) or baseline system
$Watts_{EE}$	=	Actual wattage of LED purchased / installed
HOU	=	Annual hours of use, provided for each building type
WHF_e	=	Waste heat factor for energy to account for cooling energy savings from efficient lighting provided for each building type
WHF_d	=	Waste heat factor for demand to account for cooling savings from efficient lighting provided for each building type
ISR	=	In-Service Rate – the percentage of units rebated that get installed
CF	=	Summer Peak Coincidence Factor provided for each building type

[37] Illinois Energy Efficiency Advisory Group. September 2023. *Illinois Statewide Technical Reference Manual.* "Volume 2: Commercial and Industrial Measures." Available at https://www.ilsag.info/technical-reference-manual/.

Summer and winter CF values were determined based on a project-by-project basis utilizing logger analysis data from sampled projects with system peak periods determined as follows:

- Winter - 8AM-9AM on weekdays
- Summer - 4PM-5PM on weekdays

For measures with available logger data that were verified to be accurate, the evaluation team applied summer and winter CF values using collected *in-situ* data. For measures that did not have available logger data, the evaluation team assumed summer CF values on a building-type basis from the IL TRM v11.0 and a single winter CF value based on the average of all logger findings.

The WHF input assumptions used in savings calculations were aligned with assumptions for Prescriptive Lighting, Appendix B.1. All other calculation inputs were pulled from the VisionDSM database on a per-measure basis. Final gross verified savings were calculated as the per-unit average of all installations of each measure (Table B-3).

Table B-3. 2023 SCDI Program Evaluated Savings and Demand by Component

Measure Category	Equipment Type	Number of Measures	Evaluated Gross kWh	Evaluated Net kWh	Evaluated Gross Summer kW	Evaluated Net Summer kW	Evaluated Gross Winter kW	Evaluated Net Winter kW
LED Exit Sign	LED Exit Sign	44	19,856	19,042	1.6	1.5	1.2	1.2
LED Exterior Canopy	LED Canopy 28w	1	482	462	0.1	0.1	0.0	0.0
	LED Canopy 33w	3	6,941	6,656	1.6	1.6	1.2	1.2
LED Exterior Spot	Led Flood 30w	9	5,574	5,346	1.0	0.9	0.8	0.7
	Led Flood 60w	10	18,482	17,724	2.8	2.7	2.2	2.1
	Led Flood 70w	17	65,312	62,634	9.9	9.5	7.6	7.3
LED Fixture	12 Watt Down Light (Non Res) LED Fixture	5	39,073	37,471	6.0	5.8	4.6	4.4
	8" Down Light 30W	6	62,755	60,182	8.0	7.7	6.1	5.8
	LED Barn Light Fixture	14	27,781	26,642	3.9	3.8	3.0	2.9
	LED Flat Panel 1x4 30W	2	1,283	1,230	0.2	0.2	0.2	0.2
	LED Flat Panel 2x2 30W	28	131,796	126,393	14.9	14.3	11.4	10.9
	LED Flat Panel 2x4 35W	54	1,065,806	1,022,108	171.7	164.6	131.2	125.8
LED Highbay	LED High Bay UFO 100W	7	29,828	28,605	11.0	10.5	8.4	8.1
	LED High Bay UFO 200W	4	114,177	109,496	15.0	14.4	11.5	11.0
	LED High/Low Bay >221 to 280 Watts With Sensor	7	989,935	949,348	83.4	80.0	63.7	61.1
	LED High/Low Bay >221 to 280 Watts Replacing 400W PSMH	33	1,438,781	1,379,791	150.4	144.2	114.9	110.2

Measure Category	Equipment Type	Number of Measures	Evaluated Gross kWh	Evaluated Net kWh	Evaluated Gross Summer kW	Evaluated Net Summer kW	Evaluated Gross Winter kW	Evaluated Net Winter kW
	LED High/Low Bay 40 to 131 Watts With Sensor Replacing	2	8,623	8,269	2.1	2.0	1.6	1.6
	LED High/Low Bay 40 to 131 Watts Replacing 175W PSMH	26	507,070	486,280	69.5	66.6	53.1	50.9
LED Linear	(1) 48in T8 Lamp LED replacing (1) 48in T8 Linear Fluor	529	3,630,589	3,481,735	691.6	663.2	528.4	506.7
	(1) 96in T8 Lamp LED replacing (1) 96in T8/T12 Linear F	142	526,517	504,930	105.6	101.3	80.7	77.4
	24in LED T8 8w 35k-40k-50k CCT Selectable	2	20,988	20,127	1.7	1.6	1.3	1.3
	LED replacing (1) 96in T8/T12 Linear Fluorescent Type B	9	102,533	98,330	17.2	16.5	13.2	12.6
	T5 HO Lamp LED replacing T5 Linear Fluorescent. Type B	3	48,946	46,939	5.0	4.8	3.8	3.7
	UTube Replacing Fluorescent UTube. Type B 4000 Kelvin	36	39,521	37,900	9.7	9.3	7.4	7.1
	UTube Replacing Fluorescent UTube. Type B 5000 Kelvin	33	19,808	18,996	4.9	4.7	3.7	3.6
LED Retrofit Kit	LED Retrofit Kits 2x2	18	69,283	66,443	8.2	7.9	6.3	6.0
	LED Retrofit Kits 2x4	60	424,205	406,812	82.7	79.3	63.2	60.6
Occupancy Sensor	Occupancy Sensor	21	13,874	13,305	1.4	1.4	1.1	1.1
LED Exterior Wallpack	Large Wall Pack 120W	13	23,863	22,885	3.3	3.2	2.5	2.4
	Small Wall Pack 20w	28	62,184	59,635	9.1	8.7	6.9	6.6
LED Screw In	A19 LED 9.5W	206	596,589	572,129	111.7	107.1	85.3	81.8
	LED BR/R Lamp: 11 Watts	68	144,553	138,626	32.7	31.3	25.0	23.9
	LED Candelabra: 4 Watts	4	2,568	2,463	1.0	1.0	0.8	0.7
	LED Globe: 12 Watts	9	5,418	5,196	2.1	2.0	1.6	1.5
	LED PAR30: 11 to <12 Watts	7	11,048	10,595	2.7	2.6	2.1	2.0
	LED PAR38: 15 to <16 Watts	42	57,734	55,367	9.9	9.5	7.6	7.2
TOTAL		1,502	10,333,776	9,910,091	1,653.7	1,585.9	1,263.5	1,211.7

B.3 Behavioral Impact Methodology

To evaluate the Commercial Behavioral program savings, the evaluation team conducted the following tasks:

- Data collection, review, and preparation
- Equivalency checks on treatment and control groups
- Billing analysis
- Energy-savings estimations

B.3.1 Data Collection, Review, and Preparation

The evaluation team received from Georgia Power monthly electricity bills from April 2023 through May 2024 for customers in treatment and control groups. The data included approximately 12 months of bills prior to the program's beginning and 13 months of bills after the program began. These billing data included energy use during the monthly billing cycle and on the last day of the billing cycle, as well as the following fields:

- Assignment to treatment or control group
- Account closed date (if applicable)
- NAICS/SIC code
- Service location ZIP code
- Customer account numbers for linking bills to customer information

The team also collected NOAA daily temperature data from weather stations across the state and mapped weather stations by ZIP code.

The evaluation team estimated cooling degree days (CDDs) and heating degree days (HDDs) for each customer account during the billing cycle, using a base temperature of 65°F. Using billing cycle end dates, the team calculated HDDs and CDDs that exactly matched energy use in each customer bill. To fit monthly designations for the billing analysis, the team calendarized the billing data by creating an average daily consumption (ADC) value for each billing cycling and assigning that value proportionally to the number of days per each month in the cycle.

As all weather data derived from only two stations, the temperatures did not vary significantly among businesses. Most weather variations in the data occurred over time rather than across the territory.

Using the number of days in the billing cycle, the evaluation team determined monthly energy use, daily average energy use, and weather data, and then merged the billing, weather, and program data, including the first BER approximate delivery date.

The final treatment group sample frame was 32,888, the sum of all the waves' treatment customers that were not filtered. The original treatment group population was 32,891.[38]

B.3.2 Equivalency Checks on Treatment and Control Groups

The evaluation team summarized average daily consumption in the pre-period and used a two-sample *t*-test to assess the statistical significance in the mean consumption for control and treatment group customers. No statistical differences emerged in average daily electric consumption.

B.3.3 Billing Analysis

To estimate the program electricity savings, the evaluation team used regression analyses of monthly billing data. In the past, the team reported savings from a D-in-D model and used a post-only model to test for the robustness of savings. Both models' estimates were contained with the other model's 90% confidence interval, meaning their results did not statistically differ. As the post-only model's estimates provided higher precision, the team reported only the post-only model's results. The billing analysis conformed to the approach described in the UMP[39].

The following sections provide additional details about each modeling approach.

B.3.4 Post-Only Model

The evaluation team specified the post-only model assuming the average daily consumption (ADC_{it}) of electricity of business 'i' in month 't' as given by the following equation:

$$ADC_{it} = \beta_1 PART_i + \beta_2 Pre\text{-}Usage_i \times \tau_t + \beta_3 HDD_{it} + \beta_4 CDD_{it} + \beta_5 HDD\text{^}2_{it} + \beta_6 CDD\text{^}2_{it} + W'\gamma + W\text{^}2'\omega + \tau_t + \varepsilon_{it}$$

Where:

[38] The billing analysis excluded the other two treatment groups which marked as "Treatment_1" and "Treatment_2" in the participation data provided by the implementation contractor, as these two groups cannot pass equivalency tests and were not included in the initial randomization.

[39] Given the absence of a dedicated commercial behavior program evaluation protocol, we utilized the protocol typically employed for residential behavior program evaluations. This decision is justified by the methodological similarities in the evaluation approach, including the use of a randomized controlled trial (RCT) design and the collection of billing data for pre- and post-treatment periods. The underlying principles and statistical techniques of the protocol are robust and applicable in this context, ensuring a reliable and valid assessment of the commercial behavior program's impact.

Stewart, Jim, and A. Todd. 2020.

Agnew, K., and M. Goldberg. 2017.

β_1 = Coefficient representing the conditional average treatment effect of the program on electricity use (kWh per customer per day).

$PART_i$ = Indicator variable for program participation (which equals 1 if customer 'i' was in the treatment group and 0 otherwise).

β_2 = Coefficient representing the conditional average effect of pre-treatment electricity use on post-treatment average daily consumption (kWh per customer per day).

$Pre\text{-}Usage_i \times \tau_t$ = Mean business energy consumption of customer 'i' in pre-treatment month 't'.

W = Vector using both HDD and CDD variables to control for weather impacts on energy use.

γ = Vector of coefficients representing the average impact of weather variables on energy use.

$W\text{^}2$ = Vector using both squared HDD and CDD variables to control for nonlinear weather impacts on energy use.

ω = Vector of coefficients representing the average impact of weather variables on energy use.

τ_t = Average energy use in month 't reflecting unobservable factors specific to the month. The analysis controls for these effects with month-by-year fixed effects.

ε_{it} = Error term for customer 'i' in month 't.'

B.3.5 Difference-in-Differences Fixed Effects Model

The D-in-D fixed effects model was specified, assuming average daily consumption (ADC_{it}) of electricity of customer 'i' in month 't', as given by the following equation:

$$ADC_{it} = \alpha_i + \tau_t + W'\gamma + W\text{^}2'\omega + \beta_1 PART_i \times POST_t + \epsilon_{it}$$

Where:

β_1 = Coefficient representing the program's conditional average treatment effect on electricity use (kWh per customer per day).

$PART_i$ = Indicator variable for program participation (which equals 1 if customer 'i' was in the treatment group and 0 otherwise).

$POST_t$ = Indicator variable for whether month 't' is pre- or post-treatment (which equals 1 if month 't' was in the treatment period and 0 otherwise).

W = Vector using HDD and CDD variables to control for weather impacts on energy use.

γ = Vector of coefficients representing the average impact of weather variables on energy use.

W^2	=	Vector using both squared HDD and CDD variables to control for nonlinear weather impacts on energy use.
ω	=	Vector of coefficients representing the average impact of weather variables on energy use.
α_i	=	Average energy use in customer 'i' reflecting unobservable, non-weather-sensitive, and time-invariant factors specific to the customer. The analysis controlled for these effects with customer fixed effects.
τ_t	=	Average energy use in month 't' reflecting unobservable factors specific to the month. The analysis controlled for these effects with month-by-year fixed effects.
ϵ_{it}	=	Error term for customer 'i' in month 't'

B.3.6 Energy-Savings Estimation

The evaluation team estimated the Commercial Behavioral program energy savings in 2023. To illustrate the approach, let i=1, 2, …, N to index the number of customers receiving BERs, and let D(x) be the number of the days in 2023 from January 1 for a given date (e.g., D[February 1]=32).

For each business, the gross program savings are equal to the product of the average daily savings, β_1, and the total number of BER days in the program:

$$Gross\ Savings = -\beta_1 * (\sum_{i=1}^{N} ProgramDays_i)$$

Where:

i	=	Index of the number of businesses in the wave (= 1, 2, …, N).
$ProgramDays_i$	=	Number of program days: 366 (2024 is a leap year)

B.3.7 Uplift-Savings Estimation

The evaluation team analyzed customer participation and savings data from several commercial energy efficiency programs to determine if there were uplift savings: Small Commercial Direct Install Program, Commercial Custom Program, and Commercial Prescriptive Program. The evaluation team calculated post-treatment differences of treatment and control groups' average cross-program savings per customer in the post-treatment periods.

The Commercial Behavioral program treatment groups often participate in other programs at a higher rate due to report messaging and cross-promotion. For the treatment group, some portion of deemed savings in other programs can be considered *naturally occurring*, as the control group achieved these savings without the influence of the Behavioral program. Any savings over and above naturally occurring savings (as measured by the control group) can be considered *uplift savings*, which are due to the influence of the

Behavioral program (Stewart and Todd 2020). These savings have already been claimed by other energy efficiency programs and are typically removed from the savings claimed in the Behavioral program.

The team estimated uplift savings with seven steps:

Step 1. Matched GPC energy efficiency program tracking data to the treatment and control businesses by the unique identifier.

Step 2. Assigned each transaction to a month based on the participation date field in the tracking data.

Step 3. Excluded any installations that occurred prior to the business being assigned to the treatment or control group.

Step 4. Calculated the monthly ex post kilowatt-hour savings of each efficient measure. This value was equal to the proportion of annual savings that occurred in each month. For weather-sensitive measures, we used weather data to estimate these proportions. For non-weather-sensitive measures, we used a flat savings shape.

Step 5. Summed the monthly kilowatt-hour impact, by account, for all measures installed during a given time period.

Step 6. Calculated the average kilowatt-hour savings per customer for the treatment and control groups.

Step 7. Calculated the incremental kilowatt-hours per customer from energy efficiency (treatment savings per customer minus control savings per customer) and multiplied by the total number of treatment group participants.

Appendix C Net-to-Gross Details

C.1 Prescriptive/Custom Net-to-Gross

As outlined in Table C-1, the evaluation team assessed free-ridership and participant spillover by interviewing 105 Prescriptive program participants and 21 Custom program participants using the self-report methodology. Two very large Custom program participants (labeled as Jumbo) represent 46% of the Custom's verified gross program population savings. The evaluation team is reporting these jumbo Custom project's NTG results and savings separately from the other 19 Custom respondents. The NTG results from the 19 Custom respondents are being applied to the 54% of Custom verified gross program population savings that are not associated with the jumbo projects.

Table C-1. 2023 Custom and Prescriptive Net-to-Gross Results

Program	Responses	Estimated Free-ridership	Estimated Participant Spillover	NTG Ratio
PRESCRIPTIVE TOTAL	**105**	**19.6%[1]**	**0.1%**	**80.5%**
Custom - Large and Small	19	17.5%[1]	0.0%	78.0%
Custom - Jumbo	2	26.9%	0.0%	57.7%
CUSTOM TOTAL	**21**	**23.4%[2]**	**0.0%[2]**	**65.4%**
CEEP TOTAL	**126**	**17.2%[3]**	**0.1%[3]**	**76.3%**

[1] The evaluation team weighted the estimate by respondents' verified gross program kWh savings to arrive at the estimates for the total program.
[2] The evaluation team weighted the Custom Program stratum estimates by their population verified gross program kWh savings to arrive at the estimates for the Custom Program total.
[3] The evaluation team weighted the specific Prescriptive Program total and Custom Program total estimates by their population verified gross program kWh savings to arrive at the estimates for the CEEP total.

C.1.1 Free-Ridership Scoring

C.1.1.1 Intention Free-Ridership Scoring

The evaluation team estimated intention free-ridership scores for participants based on responses to the intention-focused free-ridership questions. Table C-2 illustrates how initial responses are translated into whether the response is *yes*, *no*, or *partially* indicative of free-ridership (in parentheses). The value in brackets is the scoring decrement associated with each response option. Each participant free-ridership score starts with 50%, which the evaluation team then decremented based on responses to the questions. After assigning an intention free-ridership score to every survey respondent, the evaluation team calculated a savings-weighted average intention free-rider score for the program.

Table C-2. Raw Survey Responses Translation to Intention Free-ridership Scoring Matrix Terminology and Scoring

Without the rebate and information from Georgia Power, would you still have purchased the [MEASURE GROUP]?	Had your organization already ordered or purchased the [MEASURE GROUP] BEFORE your organization heard about the Georgia Power rebates?	Did your organization have specific plans to install the [MEASURE GROUP] before learning about the Georgia Power direct install program?	Prior to learning about Georgia Power's commercial rebate program, was the purchase and installation of the [MEASURE GROUP] included in your company's capital budget?	So, without the rebate and information or education from Georgia Power, you would not have installed [MEASURE GROUP] at all? Is that correct?	And would you have most likely installed the same quantity of [MEASURE GROUP] without the rebate and information or education from Georgia Power?	Without the rebate and information or education from Georgia Power, would you most likely have purchased a lower efficiency [MEASURE GROUP], the same efficiency [MEASURE GROUP], or a higher efficiency [MEASURE GROUP] than the one you purchased?	Without the rebate and information or education from Georgia Power, when would you most likely have installed this equipment? Would you have installed it?	Does your organization use a minimum acceptable return on investment (ROI) or hurdle rate when selecting energy efficiency projects?	Was the program rebate influential to meeting this investment criteria?
Yes (Yes) [-0%]	Yes (Yes) [50% intention free-rider score assigned]	Yes (Yes) [-0%]	Yes (Yes) [-0%]	Yes/correct (No) [-50%]	Yes, same quantity (Yes) [-0%]	Lower efficiency (No) [-50%]	Within the same year? (Yes) [-0%]	Yes (No) [-0%]	Yes (No) [-25%]
No (No) [-25%]	No (No) [-0%]	No (No) [-25%]	No (No) [-25%]	No, not correct (Yes) [-0%]	No, I would have installed fewer (Partial2) [-25%]	Same efficiency (Yes) [-0%]	Within one to two years? (Partial2) [-25%]	No (Yes) [-0%]	No (Yes) [-0%]
DK/RF (Partial) [-12.5%]	DK/RF (No) [-0%]	DK/RF (Partial) [-12.5%]	DK/RF (Partial) [-12.5%]	DK/RF (Partial) [-12.5%]	No, would not have installed any at all (No) [-50%]	Higher efficiency (Yes) [-0%]	Within three to five years? (No) [-50%]	Don't know (Partial) [-0%]	Don't know (Partial) [-0%]
					No, I would have installed more (Yes) [-0%]	DK/RF (Partial) [-12.5%]	In more than 5 years? (No) [-50%]		
					DK/RF (Partial) [-12.5%]		DK/RF (Partial) [-12.5%]		

DK = don't know; RF = refused

Table C-3 shows the unique participant response combinations resulting from the intention free-ridership questions, along with the intention score assigned to each combination and the number of responses for each combination. An "x" indicates that a question was skipped because of the participant's response to a previous question. The yes, partial, and no values in the table represent whether the respondent's answer to a given question was indicative of free-ridership. We weighted participants' intention scores by their respective verified gross kWh savings to calculate savings weighted intention-based free-rider scores of 14.9% for Prescriptive Program participants and 23.4% for Custom Program participants. Then, the evaluation team averaged the Prescriptive Program and Custom Program participant intention scores, weighting by the population verified gross energy savings for each program pathway to derive an overall CEEP intention score of 17.2%. An intention score of 25% was estimated for the jumbo Custom Program participant interviewed.

Table C-3. Frequency of Intention Scoring Combinations

1. Installed same measure without incentive?	2. Already ordered or installed?	3 Already planning to purchase?	4. In capital budget?	[Ask if 1=No] 5. Confirm, would not have installed any measure?	6. Installed same quantity?	7. Installed same efficiency?	8. Installed at the same time?	9. Organization has ROI goal?	[Ask if 9=Yes] 10. Program incentive was key to meeting goal?	Intention Score	Prescriptive Response Frequency (n=105)	Custom Response Frequency (n=20)
Yes	Yes	x	x	x	x	x	x	x	x	50%	20	8
Yes	No	Yes	Yes	x	Yes	Yes	Yes	Yes	x	50%	5	1
Yes	No	Yes	Yes	x	Yes	Yes	Yes	Partial	x	50%	5	1
Yes	No	Yes	Yes	x	Yes	Yes	Yes	No	Yes	50%	3	1
Yes	No	Yes	Yes	x	Yes	Yes	Yes	No	No	25%	3	0
Yes	No	Yes	Yes	x	Yes	Yes	Partial2	No	No	6.25%	1	0
Yes	No	Yes	Yes	x	Yes	Partial	Yes	Partial	x	37.5%	1	0
Yes	No	Yes	Yes	x	Yes	No	x	x	x	0%	2	0
Yes	No	Yes	Yes	x	Partial	Partial	Yes	Partial	x	25%	1	0
Yes	No	Yes	Yes	x	Partial2	Yes	Yes	Partial	x	25%	1	0
Yes	No	Yes	Yes	x	Partial2	Yes	Partial2	Partial	x	6.25%	1	0
Yes	No	Yes	Yes	x	Partial2	Yes	Partial2	No	Yes	6.25%	1	0
Yes	No	Yes	Partial	x	Yes	Yes	Yes	Partial	x	37.5%	2	0
Yes	No	Yes	No	x	Yes	Yes	Yes	Yes	x	25%	1	0
Yes	No	Yes	No	x	Yes	Yes	Yes	Partial	x	25%	0	1
Yes	No	Yes	No	x	Yes	Yes	Yes	No	Yes	25%	1	0
Yes	No	Yes	No	x	Yes	Yes	Partial2	Partial	x	6.25%	1	0
Yes	No	Yes	No	x	Yes	Yes	Partial2	No	Yes	6.25%	1	0
Yes	No	Partial	x	x	Yes	Yes	Yes	Partial	x	37.5%	1	0
Yes	No	Partial	x	x	Yes	Yes	Partial2	Yes	x	12.5%	1	0
Yes	No	Partial	x	x	Yes	Partial	Partial2	Partial	x	6.25%	1	0
Yes	No	Partial	x	x	Partial	Partial	Partial	Partial	x	6.25%	1	0
Yes	No	Partial	x	x	Partial	Partial	Partial	No	No	0%	1	0
Yes	No	No	x	x	Yes	Yes	Yes	Yes	x	25%	4	1
Yes	No	No	x	x	Yes	Yes	Yes	No	No	6.25%	1	0

Table C-3. Frequency of Intention Scoring Combinations cont.

1. Installed same measure without incentive?	2. Already ordered or installed?	3 Already planning to purchase?	4. In capital budget?	[Ask if 1=No] 5. Confirm, would not have installed any measure?	6. Installed same quantity?	7. Installed same efficiency?	8. Installed at the same time?	9. Organization has ROI goal?	[Ask if 9=Yes] 10. Program incentive was key to meeting goal?	Intention Score	Prescriptive Response Frequency (n=105)	Custom Response Frequency (n=20)
Yes	No	No	x	x	Yes	Yes	Partial2	Yes	x	6.25%	1	0
Yes	No	No	x	x	Yes	Partial	Yes	No	No	0%	1	0
Yes	No	No	x	x	Partial	Partial	Partial2	Yes	x	0%	1	0
Yes	No	No	x	x	Partial2	Yes	Yes	Yes	x	6.25%	1	0
Yes	No	No	x	x	Partial2	Yes	Yes	Partial	x	6.25%	0	1
Yes	No	No	x	x	Partial2	Yes	Partial2	Yes	x	0%	1	0
Yes	No	No	x	x	Partial2	Yes	Partial2	No	No	0%	2	0
Partial	Yes	x	x	x	x	x	x	x	x	50%	1	0
Partial	No	Yes	Yes	x	Yes	Yes	Yes	Partial	x	37.5%	1	0
Partial	No	Yes	Partial	x	Yes	No	x	x	x	0%	1	0
Partial	No	Yes	No	x	Yes	Yes	Partial2	Partial	x	0%	1	0
Partial	No	Yes	No	x	x	x	x	Yes	x	12.5%	1	0
Partial	No	Yes	No	x	Partial2	Yes	Yes	Yes	x	0%	1	0
Partial	No	Partial	x	x	Yes	Yes	Yes	Partial	x	25%	1	0
Partial	No	Partial	x	x	Yes	No	x	x	x	0%	2	0
Partial	No	Partial	x	x	Partial	Partial	Partial	Yes	x	0%	1	0
Partial	No	No	x	x	Yes	Yes	Yes	No	No	0%	1	0
Partial	No	No	x	x	Yes	Partial	Partial	No	Yes	0%	0	1
Partial	No	No	x	x	Partial	Yes	No	x	x	0%	1	0
Partial	No	No	x	x	Partial	Partial	Partial	Yes	x	0%	1	0
Partial	No	No	x	x	Partial	Partial	Partial2	Yes	x	0%	1	0
Partial	No	No	x	x	Partial	No	x	x	x	0%	2	0
Partial	No	No	x	x	Partial2	Yes	Partial	No	No	0%	1	0

Table C-3. Frequency of Intention Scoring Combinations cont.

1. Installed same measure without incentive?	2. Already ordered or installed?	3 Already planning to purchase?	4. In capital budget?	[Ask if 1=No] 5. Confirm, would not have installed any measure?	6. Installed same quantity?	7. Installed same efficiency?	8. Installed at the same time?	9. Organization has ROI goal?	[Ask if 9=Yes] 10. Program incentive was key to meeting goal?	Intention Score	Prescriptive Response Frequency (n=105)	Custom Response Frequency (n=20)
Partial	No	No	x	x	Partial2	Partial	Partial	Partial	x	0%	1	1
Partial	No	No	x	x	Partial2	Partial	No	x	x	0%	1	0
Partial	No	No	x	x	No	x	x	x	x	0%	1	0
No	x	x	x	Yes	Yes	Yes	Partial2	Partial	x	6.25%	1	0
No	x	x	x	Yes	Partial2	No	x	x	x	0%	1	1
No	x	x	x	Yes	No	x	x	x	x	0%	2	2
No	x	x	x	Partial	Yes	Yes	Partial2	Partial	x	0%	1	0
No	x	x	x	Partial	Yes	No	x	x	x	0%	1	0
No	x	x	x	Partial	Partial2	Yes	Partial2	Yes	x	0%	1	0
No	x	x	x	No	x	x	x	x	x	0%	11	1

C.1.1.2 Influence Free-Ridership Scoring

To estimate influence free-ridership scores, the evaluation team asked participants questions with several options to identify how program elements influenced their decisions about the energy efficiency measure they implemented. The influence of any one of the program elements determined how influential the program was in their decisions to install program-qualifying equipment. A respondent's influence score was determined from the maximum rating of any single program element, rather than an average, because it was assumed that if any given element had a great influence on the respondent's decision, then the program itself was successful in influencing the respondent's decision.[40]

Table C-4 shows the distribution of responses to the influence question: "I'm going to read a list of possible factors that contributed to your decision to install [MEASURE] through the program. Please rate each factor on how important it was on your decision to purchase the [MEASURE]. Please use a scale from 1, meaning *not at all important*, to 5, meaning the item was *very important* in your decision." The evaluation team assessed influence free-ridership from participants' ratings to the relative importance of various program elements in their purchasing decisions. Table C-4 lists these program elements, along with a count and the average rating participants gave for each factor.

[40] Based on the evaluation team's experience fielding self-report surveys, the language in the influence questions asks participants about the importance of the utility program, rebate, and product rather than its influence. Using the term *important* rather than *influence* reduces possible customer bias because of the perceived reluctance to report being influenced when making an investment decision.

Table C-4. 2023 CEEP Free-ridership Influence Responses

Influence Rating	Influence Score	Georgia Power or ICF staff		Rebates for the equipment		Information about energy efficiency that Georgia Power provided		Previous participation in a Georgia Power energy efficiency program	
		Prescriptive	Custom	Prescriptive	Custom	Prescriptive	Custom	Prescriptive	Custom
1 - Not at all important	50%	16	5	9	2	14	4	14	3
2	37.5%	10	4	4	3	8	2	5	2
3	25%	15	1	16	2	13	3	8	1
4	12.5%	12	5	24	1	25	2	8	0
5 - Very important	0%	15	4	49	12	27	7	32	8
Don't know	25%	13	0	2	0	9	1	13	2
Not applicable	25%	24	1	1	0	9	1	25	4
Average Rating		**3.0**	**2.9**	**4.0**	**3.9**	**3.5**	**3.3**	**3.6**	**3.6**

The evaluation team used the maximum rating given by each participant for any factor in Table C-4 to determine the participant's influence score presented in Table C-5. The team weighted individual influence scores by each participant's respective verified gross kilowatt-hour program savings associated with the total survey sample to arrive at a savings-weighted average influence score of 4.7% for Prescriptive Program participants and 13.5% for Custom Program participants. The jumbo Custom Program participant gave a maximum program factor rating of 4 ('information about energy efficiency that Georgia Power provided') and their influence score is 12.5%.

Table C-5. 2023 Program Influence Score

Maximum Influence Rating	Influence Score	Prescriptive			Custom		
		Count [1]	Total Analysis Sample Verified Gross Savings (kWh)	Influence Score Savings (kWh)	Count[1]	Total Analysis Sample Verified Gross Savings (kWh)	Influence Score Savings (kWh)
1 - Not at all important	50%	8	1,500,655	750,327	2	1,925,534	962,767
2	37.5%	3	120,981	45,368	3	204,239	76,590
3	25%	12	922,316	230,579	1	546,053	136,513
4	12.5%	20	1,049,320	131,165	2	23,055,965	2,881,996
5 - Very important	0%	59	21,042,726	0	12	4,301,148	0
Not applicable/Don't know	25%	3	922,316	230,579	0	546,053	136,513
Average Maximum Influence Rating – Simple Average			**4.2**			**4.0**	
Average Influence Score – Weighted by Verified Gross kWh Savings			**4.7%**			**13.5%**	

[1] Refers to the number of responses for each factor/influence score response option.

C.1.2 Participant Spillover

Participant spillover reflects activities, purchases, and installations of high-efficiency equipment that result from program participation, but that are not funded through a Georgia Power program. The evaluation team estimated participant spillover based on the following information: (1) the installation and description of energy efficiency measures not rebated by Georgia Power since starting participation in CEEP, (2) an estimate of the energy savings generated by the measures, and (3) the influence of the CEEP participation on the decision to make the energy efficiency improvements. Surveys collected this information via questions that asked program participants if the program prompted a decision to install *other* energy-

efficient measures or to make *other* energy-efficient improvements beyond what was specifically rebated through the program. The key questions used were these:

- Since participating in the program, has the company installed any other energy-efficient products or equipment, or made any energy efficiency improvements for which they did not receive a rebate from Georgia Power?
- Were these actions, in their view, influenced by the program?
- How do they know the additional equipment installed is high-efficiency? (The survey included equipment specific follow-up questions.)

The survey asked respondents about the level of influence program elements and Georgia Power had on their decisions to install the additional measures. Table C-6 provides the question designed to capture program influence on spillover and example influence ratings.

Table C-6. Calculating Program Spillover Influence Score

On a 1 to 5 scale, with 1 meaning "not at all important," to 5, meaning the item was "very important" to your decisions, how important were each of the following on your decision to install [INSERT ITEM FROM Q50] without a rebate from Georgia Power?							
Rate Influence of Program Elements							
	1. Not at all Important				*5. Very Important*		
Information about energy savings from Georgia Power marketing, program staff, or contractors	1	2	3	(4)	5	DK	N/A
Your satisfaction with the equipment for which you received a rebate	1	2	3	4	(5)	DK	N/A
Your experience with the Georgia Power small commercial direct install program in general	1	2	(3)	4	5	DK	N/A

The evaluation team assigned a maximum influence rating to a value that determined what proportion of the relevant measures' savings is attributed to the program:

- A rating of 5 = 1.0 (full savings attributed to the program).
- A rating of 4 = 0.5 (half of the savings attributed to the program).
- A rating of 1 or 2 or 3 = 0 (no savings attributed to the program).

Table C-7 shows the steps the evaluation team used to determine program participant spillover.

Table C-7. Participant Spillover Calculation

Variable	Variable Description	Source
A	Survey Sample Size (n)	Survey Data
B	Total Survey Sample Spillover kWh Savings	Survey Data / Engineering Estimates
C	Average Spillover kWh Savings Per Survey Respondent	Variable B ÷ Variable A
D	Program Participant Population	Program Tracking Data
E	Spillover kWh Savings Extrapolated to the Participant Population	Variable C × Variable D
F	Evaluated Program Population Verified Gross kWh Savings	Evaluated Gross Impact Analysis
G	Spillover Percent Estimate	Variable E ÷ Variable F

Ten Prescriptive Program participants reported that after participating in the program they installed additional high-efficiency measures for which they did not receive an incentive and Georgia Power was important in their decision to install these measures. Table C-8 lists the spillover measures, along with the respondents' maximum rating of the importance of different key program elements on their decision to invest in the additional energy-efficient improvements. The gross energy savings estimated for the spillover measures are in alignment with this evaluation and the Georgia Power TRM 3.0. The reported spillover activity accounts for energy savings of 25,220 kWh, which represents Variable B in the Prescriptive program spillover algorithm in Table C-7.

Table C-8. 2023 Prescriptive Program Attributed Spillover Measures

Spillover Response	Spillover Measure	Quantity	Total Spillover kWh Savings	Maximum Influence Rating	Influence Attribution Percentage	Attributed Spillover kWh Savings	Total Survey Sample Spillover kWh Savings
1	LED Lighting	120	6,048	4	50%	3,024.0	25,220
2	LED Lighting Project	1	14,500	5	100%	14,500	
3	LED Lighting Project	1	5,396	5	100%	5,396	
4	Exit Signs	100	2,300	5	100%	1,150	
11	Air Conditioning Wall Units	15	5,910	5	100%	5,910	
12	Central Air Conditioner	1	4,981	4	50%	2490.5	

None of the Custom Program participants reported that after participating in the program they installed additional high-efficiency measures for which they did not receive an incentive and Georgia Power was important in their decision to install these measures. The resulting participant spillover estimate for the Custom Program is 0%.

C.2 Small Commercial Direct Install Net-to-Gross

To estimate free-ridership and participant spillover for the SCDI program, the evaluation team performed surveys with 51 participants. Table C-9 shows the overall 95.9% NTG estimate for the SCDI program, calculated based on the following NTG formula: NTG Ratio = 1 – Free-ridership + Participant Spillover.

Table C-9. 2023 SCDI Program NTG

Responses	Estimated Free-ridership	Estimated Participant Spillover	NTG Ratio
51	4.1%	0.0%	95.9%

C.2.1 Free-Ridership

C.2.1.1 Intention Free-Ridership Scoring

The evaluation team estimated intention free-ridership scores for participants based on responses to the intention-focused free-ridership questions. Table C-10 illustrates how initial responses are translated into whether the response is *yes*, *no*, or *partially* indicative of free-ridership (in parentheses). The value in brackets is the scoring decrement associated with each response option. Each participant free-ridership score starts with 50%, which the evaluation team then decremented based on responses to the questions. After assigning an intention free-ridership score to every survey respondent, the evaluation team calculated a savings-weighted average intention free-ridership score for the program.

Table C-10. Raw Survey Responses Translation to Intention Free-ridership Scoring Matrix Terminology and Scoring

Without the rebate and information from Georgia Power would you still have purchased the [MEASURE GROUP]?	Had your organization ALREADY ordered or purchased the [MEASURE GROUP] BEFORE your organization heard about the Georgia Power rebates?	Did your organization have specific plans to install the [MEASURE GROUP] before learning about the Georgia Power direct install program?	Prior to learning about Georgia Power's commercial direct install program, was the purchase and installation of the [MEASURE GROUP] included in your company's capital budget?	So, without the rebate and information or education from Georgia Power, you would not have installed [MEASURE GROUP] at all? Is that correct?	And would you have most likely installed the same quantity of [MEASURE GROUP] without the rebate and information or education from Georgia Power?	Without the rebate and information or education from Georgia Power, would you most likely have purchased a lower efficiency [MEASURE GROUP], the same efficiency [MEASURE GROUP], or a higher efficiency [MEASURE GROUP] than the one you purchased?	Without the rebate and information or education from Georgia Power, when would you most likely have installed this equipment? Would you have installed it …	Does your organization use a minimum acceptable return on investment (ROI) or hurdle rate when selecting energy efficiency projects?	Was the program rebate influential to meeting this investment criteria?
Yes (Yes) [-0%]	Yes (Yes) [50% intention free-rider score assigned]	Yes (Yes) [-0%]	Yes (Yes) [-0%]	Yes/correct (No) [-50%]	Yes, same quantity (Yes) [-0%]	Lower efficiency (No) [-50%]	Within the same year? (Yes) [-0%]	Yes (No) [-0%]	Yes (No) [-25%]
No (No) [-25%]	No (No) [-0%]	No (No) [-25%]	No (No) [-25%]	No, not correct (Yes) [-0%]	No, I would have installed fewer (Partial2) [-25%]	Same efficiency (Yes) [-0%]	Within one to two years? (Partial2) [-25%]	No (Yes) [-0%]	No (Yes) [-0%]
DK/RF (Partial) [-12.5%]	DK/RF (No) [-0%]	DK/RF (Partial) [-12.5%]	DK/RF (Partial) [-12.5%]	DK/RF (Partial) [-12.5%]	No, I would not have installed any at all (No) [-50%]	Higher efficiency (Yes) [-0%]	Within three to five years? (No) [-50%]	Don't know (Partial) [-0%]	Don't know (Partial) [-0%]
					No, I would have installed more (Yes) [-0%]	DK/RF (Partial) [-12.5%]	In more than 5 years? (No) [-50%]		
					DK/RF (Partial) [-12.5%]		DK/RF (Partial) [-12.5%]		
DK = don't know; RF = refused									

The evaluation team estimated intention free-ridership scores based on participant responses to the intention-focused free-ridership questions. The team translated their responses into a matrix value and applied a consistent, rules-based calculation to obtain the final score. Table C-11 shows the unique participant response combinations resulting from the intention free-ridership questions, along with the intention score assigned to each combination and the number of responses for each combination. An "x" indicates that a question was skipped because of the participant's response to a previous question. The *yes*, *partial*, and *no* values in the table represent whether the respondent's answer to a given question was indicative of free-ridership. The team weighted individual influence scores by each participant's respective verified gross kilowatt-hour program savings associated with the total survey sample to arrive at a savings-weighted average intention score of 2.7% for SCDI program participants.

Table C-11. Frequency of Intention Scoring Combinations (n=51)

1. Installed same measure without incentive?	2. Already ordered or installed?	3. Already planning to purchase?	4. In capital budget?	[Ask if 1=No] 5. Confirm, would not have installed any measure?	6. Installed same quantity?	7. Installed same efficiency?	8. Installed at the same time?	9. Organization has ROI goal?	[Ask if 9=Yes] 10. Program incentive was key to meeting goal?	Intention score	Response frequency
Yes	Yes	x	x	x	x	x	x	x	x	50%	3
Yes	No	Yes	No	x	Yes	Yes	Yes	Yes	x	25%	1
Yes	No	Yes	No	x	Yes	Yes	Partial2	Yes	x	6%	2
Yes	No	No	x	x	Partial2	No	x	x	x	0%	1
Partial	Yes	x	x	x	x	x	x	x	x	50%	3
Partial	No	Yes	Yes	x	Yes	No	x	x	x	0%	1
Partial	No	Yes	No	x	Partial2	Yes	No	x	x	0%	1
Partial	No	Yes	No	x	Partial2	No	x	x	x	0%	1
Partial	No	Yes	No	x	No	x	x	x	x	0%	1
Partial	No	No	x	x	Partial	Yes	Partial	Partial	x	0%	1
Partial	No	No	x	x	Partial2	Partial	Partial2	Partial	x	0%	1
No	x	x	x	Yes	Yes	No	x	x	x	0%	1
No	x	x	x	Yes	Partial	Partial	Partial	Yes	x	0%	1
No	x	x	x	Yes	Partial	Partial	No	x	x	0%	1
No	x	x	x	Yes	Partial2	Yes	No	x	x	0%	1
No	x	x	x	Yes	Partial2	No	x	x	x	0%	1
No	x	x	x	Yes	No	x	x	x	x	0%	6
No	x	x	x	Partial	Partial	Partial	Partial2	Partial	x	0%	1
No	x	x	x	Partial	No	x	x	x	x	0%	1
No	x	x	x	No	x	x	x	x	x	0%	22

Partial2 = 25% decrement

C.2.1.2 Influence Free-Ridership Scoring

To estimate influence free-ridership scores, the evaluation team asked participants questions with several options to identify how program elements influenced their decisions about the energy efficiency measure they implemented. The influence of any one of the program elements determined how influential the program was in their decisions to install program-qualifying equipment. A respondent's influence score was determined from the maximum rating of any single program element, rather than an average, because it was assumed that if any given element had a great influence on the respondent's decision, then the program itself was successful in influencing the respondent's decision.[41]

Table C-12 shows the distribution of responses to the influence question: "The following is a list of possible factors that contributed to your decision to install [MEASURE GROUP] through the program. Please rate each factor on how important it was in your decision to purchase the [MEASURE GROUP]. Please use a scale from 1, meaning "not at all important," to 5, meaning the item was "very important" in your decision." The evaluation team assessed influence free-ridership from participants' ratings to the relative importance of various program elements in their purchasing decisions. Table C-12 lists these program elements, along with a count and the average rating participants gave for each factor.

[41] Based on the evaluation team's experience fielding self-report surveys, the language in the influence questions asks participants about the importance of the utility program, rebate, and product rather than its influence. Using the term *important* rather than *influence* reduces possible customer bias because of the perceived reluctance to report being influenced when making an investment decision.

Table C-12. 2023 SCDI Program Free-ridership Influence Responses (n=51)

Question Response Options	Influence Score	Georgia Power or FCI staff	Cost-sharing for the equipment	Information about energy efficiency that Georgia Power provided	The free assessment for your business[1]	Previous participation in a Georgia Power Energy Efficiency program
1 – Not at all important	50%	7	1	3	3	18
2	37.5%	4	1	4	0	2
3	25%	7	3	12	2	2
4	12.5%	8	4	6	8	3
5 - Very important	0%	19	39	23	22	7
Don't Know	25%	4	1	1	2	17
(No response or not asked)	Not included in analysis	2	2	0	14	2
Average		3.6	4.6	3.9	4.3	2.3

[1] Asked if Q7=Yes. (*Q7. Do you recall receiving a lighting assessment from a program representative before implementing the energy efficiency project?)*

The evaluation team used the maximum rating given by each participant for any factor to determine the participant's influence score presented in Table C-13. The team weighted individual influence scores by each participant's respective verified gross kilowatt-hour program savings associated with the total survey sample to arrive at a savings-weighted average influence score of 1.4% for SCDI program participants.

Table C-13. 2023 Program Influence Score (n=51)

Maximum Influence Rating	Influence Score	Count[1]	Verified Gross kWh Savings	Influence Score kWh Savings
1 – Not at all important	50%	1	9,658	4,829
2	37.5%	0	0	0
3	25%	2	9,869	2,467
4	12.5%	3	22,195	2,774
5 - Very important	0%	42	777,852	0
Don't Know	25%	1	6,346	1,587
(No response)	Not included in analysis	2	-	-
Average Maximum Influence Rating - Simple Average		4.8		
Average Influence Score - Weighted by Ex Post Savings			1.4%	

[1] Refers to the number of responses for each factor/influence score response option.

C.2.2 Participant Spillover

Participant spillover reflects activities, purchases, and installations of high-efficiency equipment that result from program participation, but that are not funded through a Georgia Power program. The evaluation team estimated participant spillover based on the following information: (1) the installation and description of energy efficiency measures not rebated by Georgia Power since starting SCDI program participation, (2) an estimate of the energy savings generated by the measures, and (3) the influence of the SCDI program participation on the decision to make the energy-efficient improvements. Surveys collected this information via questions that asked program participants if the program prompted a decision to install *other* energy-efficient measures or to make *other* energy-efficient improvements beyond what was specifically rebated through the program. The key questions used were these:

- Since participating in the program, has the company installed any other energy-efficient products or equipment, or made any energy-efficient improvements for which they did not receive a rebate from Georgia Power?
- Were these actions in their view influenced by the program?
- How do they know the additional equipment installed is high-efficiency? (The survey included equipment specific follow-up questions.)

The survey asked respondents about the level of influence program elements and Georgia Power had on their decisions to install the additional measures. Table C-14 provides the question designed to capture program influence on spillover and example influence ratings.

Table C-14. Calculating Program Spillover Influence Score

On a 1 to 5 scale, with 1 meaning "not at all important," to 5, meaning the item was "very important" to your decisions, how important were each of the following on your decision to install [INSERT ITEM FROM Q50] without a rebate from Georgia Power?							
Rate Influence of Program Elements							
	1. Not at all Important				*5. Very Important*		
Information about energy savings from Georgia Power marketing, program staff, or contractors	1	(2)	3	4	5	DK	N/A
Your satisfaction with the equipment for which you received a rebate	1	2	3	4	(5)	DK	N/A
Your experience with the Georgia Power small commercial direct install program in general	1	2	(3)	4	5	DK	N/A

The evaluation team assigned a maximum influence rating to a value that determined what proportion of the relevant measures' savings is attributed to the program:

- A rating of 5 = 100% (full savings attributed to the program).
- A rating of 4 = 50% (half of the savings attributed to the program).
- A rating of 1 or 2 or 3 = 0% (no savings attributed to the program).

Table C-15 shows the steps the evaluation team used to determine like program participant spillover.

Table C-15. Program Participant Spillover Calculation

Variable	Variable Description	Source
A	Survey Sample Size (n)	Survey Data
B	Total Survey Sample Spillover kWh Savings	Survey Data / Engineering Estimates
C	Average Spillover kWh Savings Per Survey Respondent	Variable B ÷ Variable A
D	Program Participant Population	Program Tracking Data
E	Spillover kWh Savings Extrapolated to the Participant Population	Variable C × Variable D
F	Evaluated Program Population Verified Gross kWh Savings	Evaluated Gross Impact Analysis
G	Spillover Percent Estimate	Variable E ÷ Variable F

None of the surveyed participants reported that, after participating in the program, they had installed additional Georgia Power program eligible equipment for which they did not receive an incentive and that participation in the SCDI program was important in their decision. Therefore, no spillover is attributed to the program.

Appendix D Process Evaluation

Table D-1 and Table D-2 present the summary sample counts and response rates for the surveys conducted with participants and with participating and nonparticipating contractors, including actual sample counts for both phone and email survey attempts, and the final count of completed surveys. Phone and email response rates averaged 14% for the participant survey, with a higher response rate for Custom participants. Response rate for participants in this evaluation cycle is higher than the 2018 and 2021 evaluations, which averaged a response rate of 13% and 10% respectively. Response rates for contractors averaged 6% for this evaluation cycle, the same as in the prior 2021 evaluation.

Table D-1. Custom/Prescriptive Participant Survey Disposition

	Prescriptive	Custom	Total
Number of Applications	2466	191	2657
Unique Participant Phone Numbers	311	26	337
Unique Participant Email Addresses	522	71	593
Phone Completes	38	0	38
Email Completes	67	21	88
Total Completes	**105**	**21**	**126**
Phone Response Rate	12%	0%	11%
Email Response Rate	13%	30%	15%
Final Response Rate	**13%**	**22%**	**14%**

Table D-2. Contractor Survey Disposition

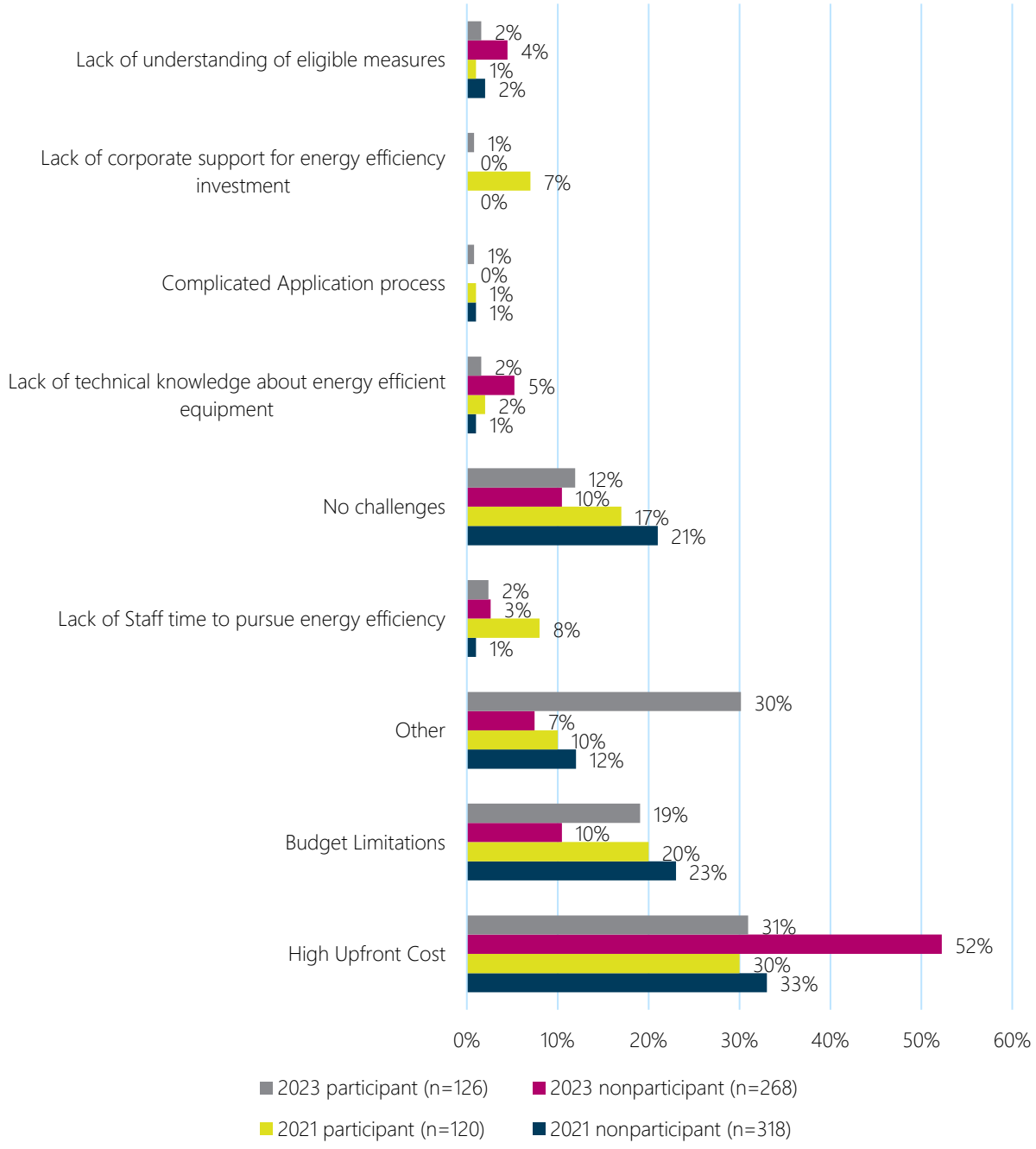
	Participating	Nonparticipating	Total
Trade Allies	108	694	802
Trade Allies with Phone Numbers	64	646	710
Trade Allies with Emails	33	n/a	33
Phone Completes	14	27	41
Email Completes	5	n/a	5
Total Completes	**19**	**27**	**46**
Phone Response Rate	22%	4%	6%
Email Response Rate	15%	n/a	15%
Final Response Rate	**20%**	**4%**	**6%**

D.1 Prescriptive/Custom Program

D.1.1 Market Barriers

As noted in Section 2.5, similar to prior years, cost (both initial cost and overall budget limitations) was the largest barrier to participation. Cost was noted by 31% of participants and 52% of nonparticipant respondents, and budget limitations were noted by 19% of participants and 10% of nonparticipant respondents. Twelve percent (12%) of participants and 10% of nonparticipant respondents noted no barriers to participation. Comparing responses in this evaluation to the prior evaluation cycle, participants reported that 'lack of staff time to pursue energy efficiency opportunities' was not as much of a barrier this cycle and nonparticipants reported an increase in barriers including 'lack of technical knowledge', 'lack of understanding of eligible measures', and 'high upfront cost' in comparison to 2021 (Figure D-1).

*Figure D-1. Trends in Barriers to Participation**



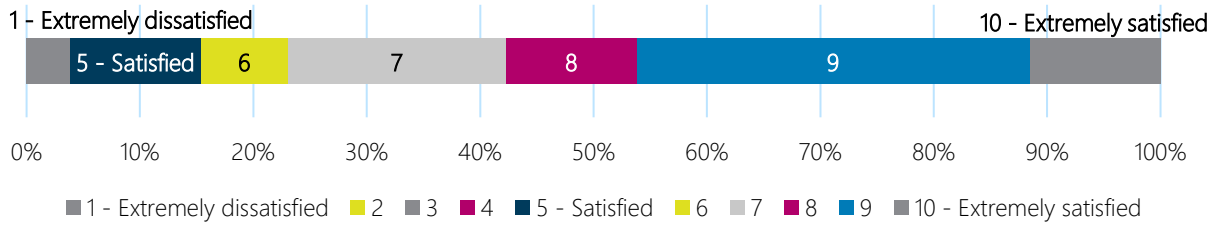
*Totals may not sum to 100% due to rounding

Source: Custom/Prescriptive Participant Survey. Questions Q37. "What are the most significant challenges to installing energy efficiency equipment at companies like yours"

D.1.2 Satisfaction

As noted in Section 2.5.4, nonparticipating contractors' satisfaction with Georgia Power overall was high, with 56% of respondents providing a rating of 8 or higher, and one respondent providing a rating under 5 (Figure D-2).

Figure D-2. Nonparticipating Contractors Satisfaction with Georgia Power



Source: Commercial Nonparticipating Contractor Survey, Q11: "I would like to know your level of satisfaction with Georgia Power Company overall. Please tell me how satisfied you are on a 1 to 10 scale where 1 means "extremely dissatisfied" and 10 means "extremely satisfied." (n=26)

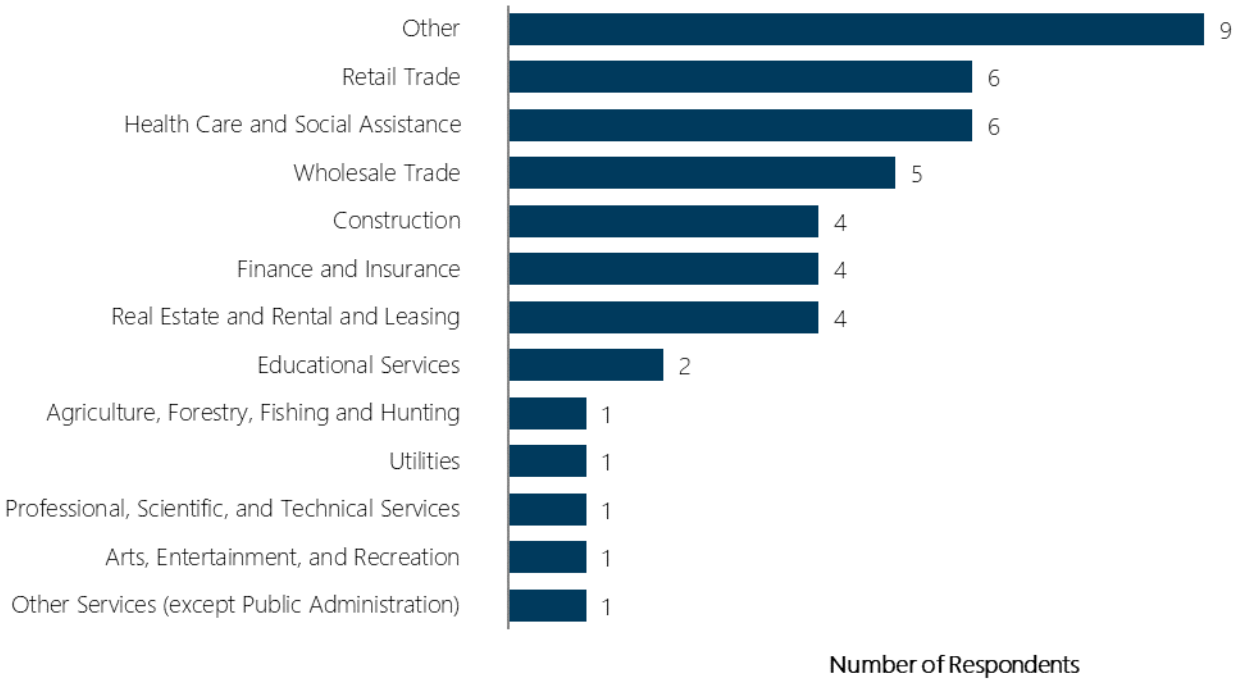
D.2 Small Commercial Direct Install

D.2.1 Survey and Interview Firmographics

D.2.1.1 Participant Survey Firmographics

Respondents shared some information about their companies and the facilities included in this program. Figure D-3 lists the primary industries of the participating organizations. Retail Trade is the most common.

Figure D-3. SCDI Program Participant Primary Industries



Source: SCDI Program Participant Survey. Question Q73. "What is the primary industry of your organization?" n=46

Thirty of 42 respondents who provided the square footage of their facility said it was 5,000 square feet or less. The range of square footage of facilities was from 600-75,000 square feet. Participants also shared whether their conditioned spaces and water are heated with gas or electricity (Table D-3).

Table D-3. SCDI Program Participant Facility Metrics

Square Footage	5,000 or less	10,000 or more
Number of respondents	30	8
Heating Type	Natural Gas	Electric
Conditioned space heating	18	24
Water heating	11	27

Source : Participant Survey. Question Q74-766. "What is the approximate square footage of heated and cooled space in your facility?" "Is your facility conditioned space heated primarily with electricity or gas?" and "Is your facility's water heated primarily with electricity or gas?" n=38-46.

D.2.1.2 Contractor Interview Firmographics

The company size of the three interviewed contractors ranged from 6 to 18 employees (including full and part-time employees; no subcontractors). The two contractors with the most employees provide services throughout Atlanta and the State, while the contractor with the fewest employees concentrates its services in the Southeast corner of Georgia.

Table D-4 describes the company size and service areas represented by the three contractors.

Table D-4. Contractors' Company Size and Service Areas

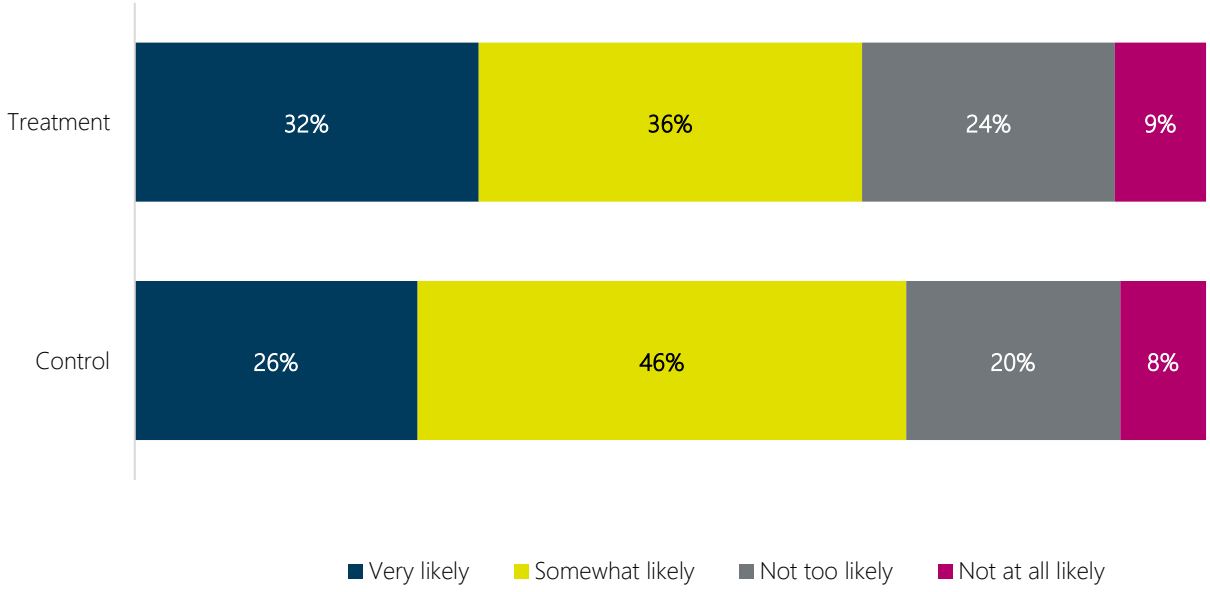
	Respondent 1	Respondent 2	Respondent 3
Number of employees in Georgia	15	18	6
Served areas of Georgia	Metro Atlanta but will travel about 30 miles	All four corners of the state	Southeast corner of Georgia

Source: Contractor Interviews. Questions Q21 and Q22. *"Please tell me approximately how many people your company employs to serve customers in Georgia."* and "What geographic areas in Georgia does your company provides service to?" n=3.

D.3 Commercial Behavioral

This section contains additional analysis from the treatment and control group survey. Figures D-4 through D-7 illustrate additional findings from the survey. Interestingly, Control customers were more likely to say they were very or somewhat likely to participate in a Georgia Power program in the next six months (72% Control v. 68% Treatment).

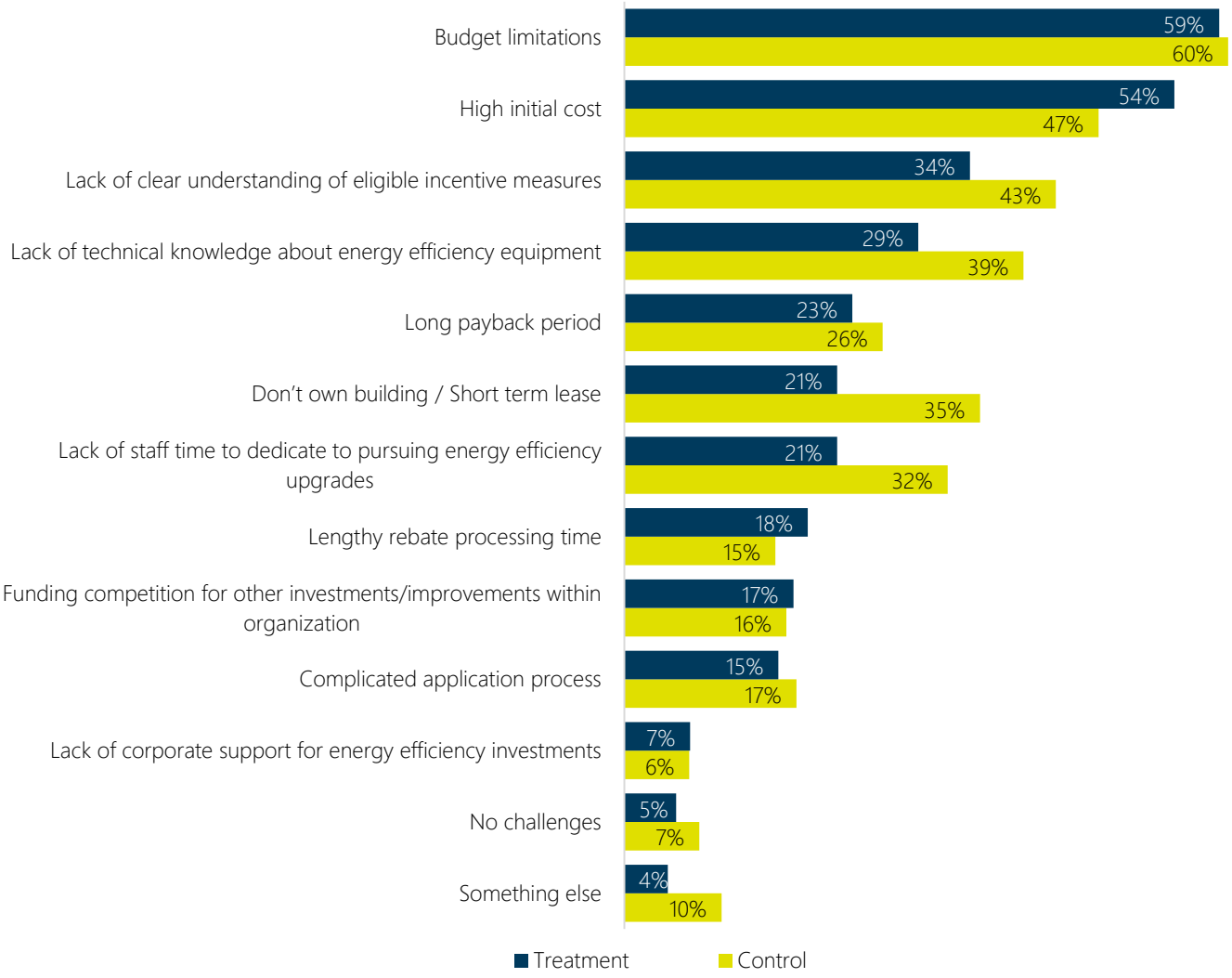
Figure D-4. Likelihood to Participate in a Georgia Power Program in the Next Six Months



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q6. "The Georgia Power Commercial Energy Efficiency programs provide commercial customers like you with rebates and incentives to install energy-efficient equipment such as lighting, chillers, smart Wi-Fi thermostats, variable frequency drives, pumps, motors, kitchen equipment, and other equipment. How likely do you think your business would be to participate in one of these programs in the next six months?" Treatment n=165; Control n=125. Percentages may not add to 100% due to rounding.

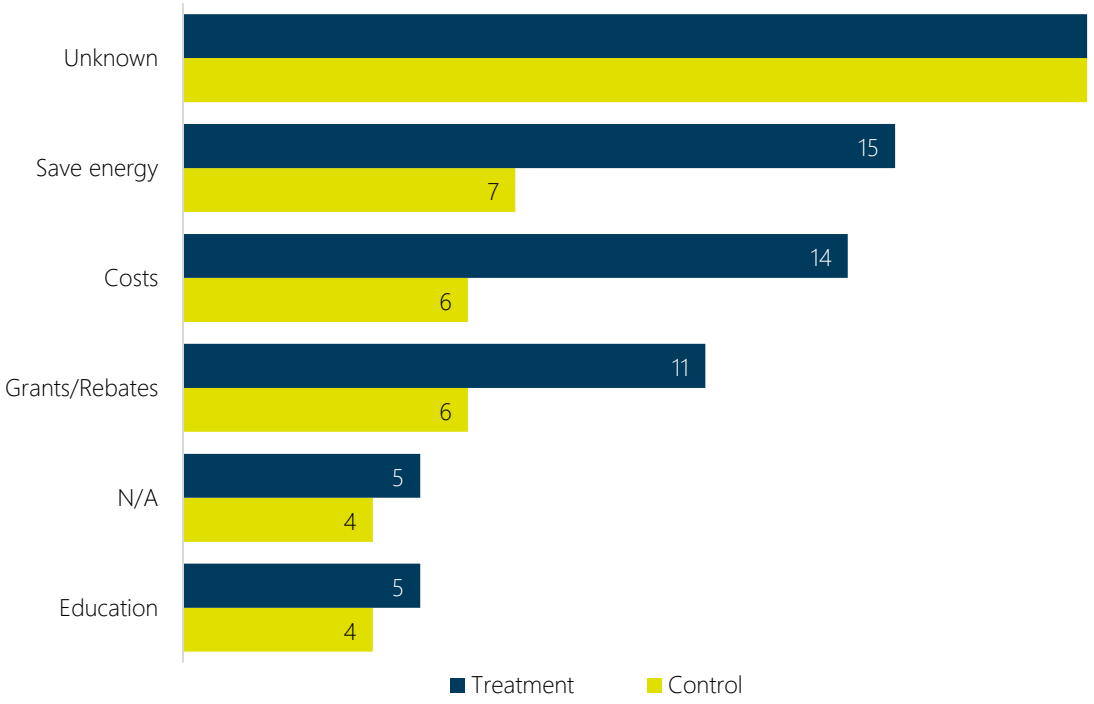
Both Treatment and Control customers indicated that budget limitations and high costs were among their top two challenges to saving energy in their facilities (Figure D-5). Control customers indicated greater challenges in not having a good understanding of eligible measures, lacking technical knowledge about energy-efficient equipment, and being a lessee as concerns.

Figure D-5. Challenges to Making Energy Efficiency Upgrades



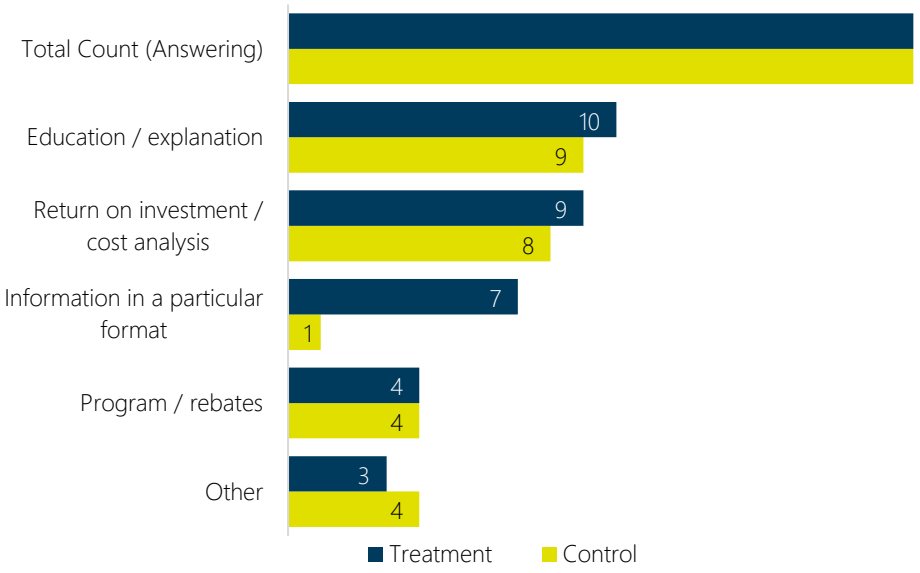
Source: Commercial Behavioral Program Treatment and Control Survey. Question Q14. "Generally speaking, what are the challenges to making energy efficient improvements in your business? Please check all that apply. [LIST OF ITEMS]" Treatment n=138; Control n=94.

Figure D-6. Suggestions for How Georgia Power Can Help Businesses Overcome Challenges



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q15. "What could Georgia Power do to help your business overcome these challenges?" Treatment n=78 suggestions; Control n=48 suggestions. Certain suggestions could not be categorized or were irrelevant.

Figure D-7. Additional Information that Would Motivate Upgrades



Source: Commercial Behavioral Program Treatment and Control Survey. Question Q17. "What kind of information from Georgia Power would motivate you to make more energy-efficient purchases or upgrades on current equipment?" Treatment n=29; Control n=21.

Appendix E Commercial Lighting Hours of Use Load Shapes

Figure 6-1: Education Average Weekly + Holiday Schedule

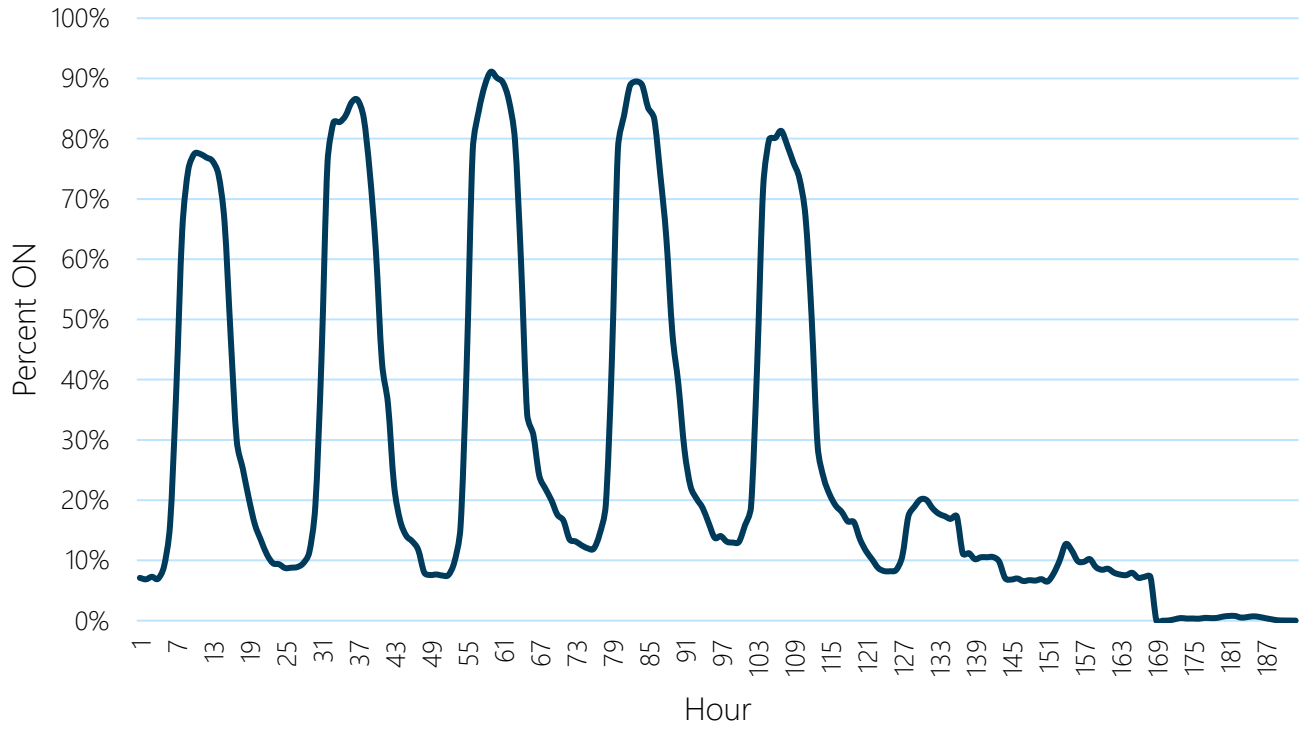


Figure 6-2: Large Office Average Weekly + Holiday Schedule

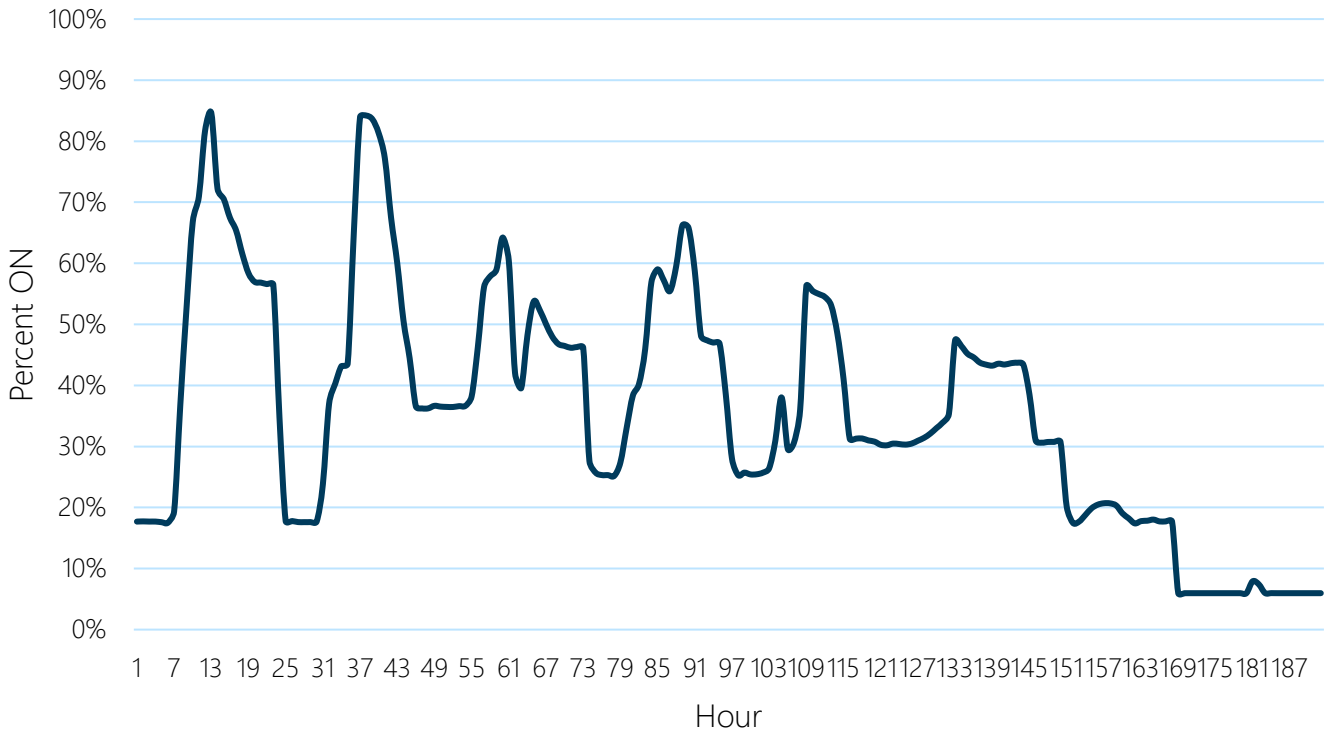


Figure 6-3: Large Retail Average Weekly + Holiday Schedule

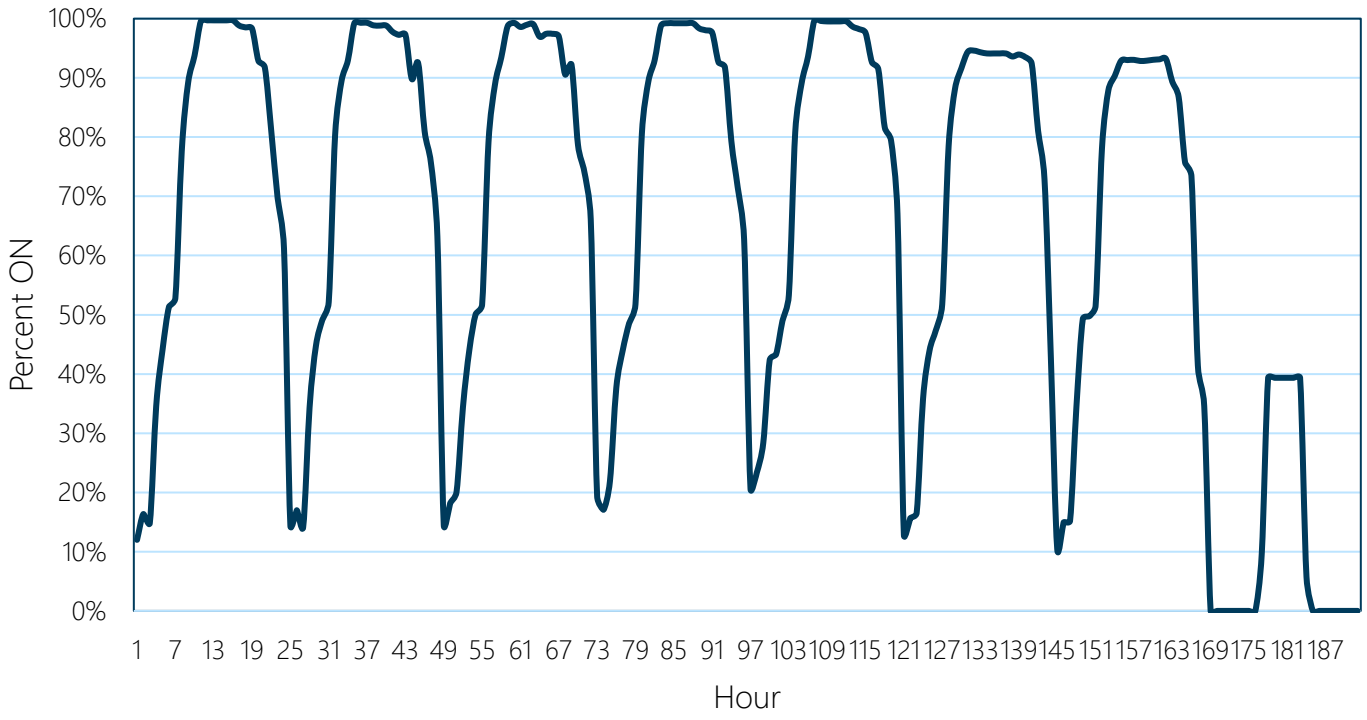


Figure 6-4: Lodging/Multi-Family Average Weekly + Holiday Schedule

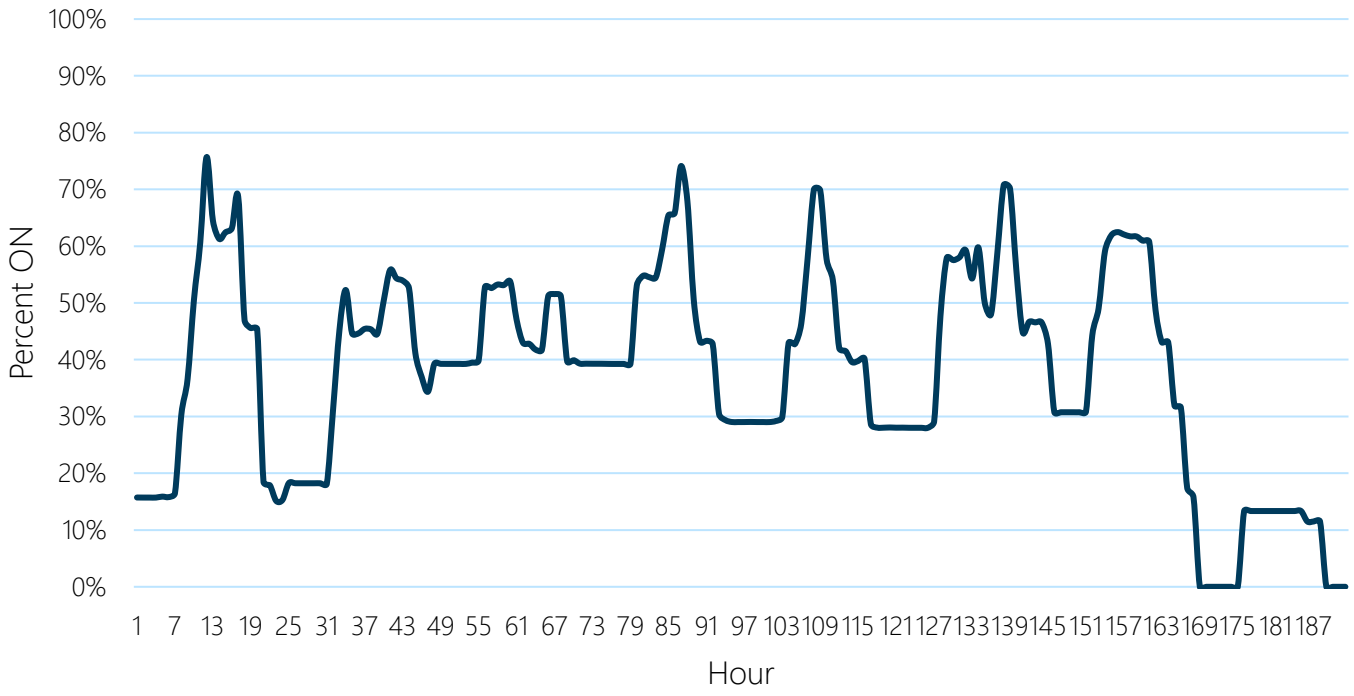


Figure 6-5: Miscellaneous Average Weekly + Holiday Schedule

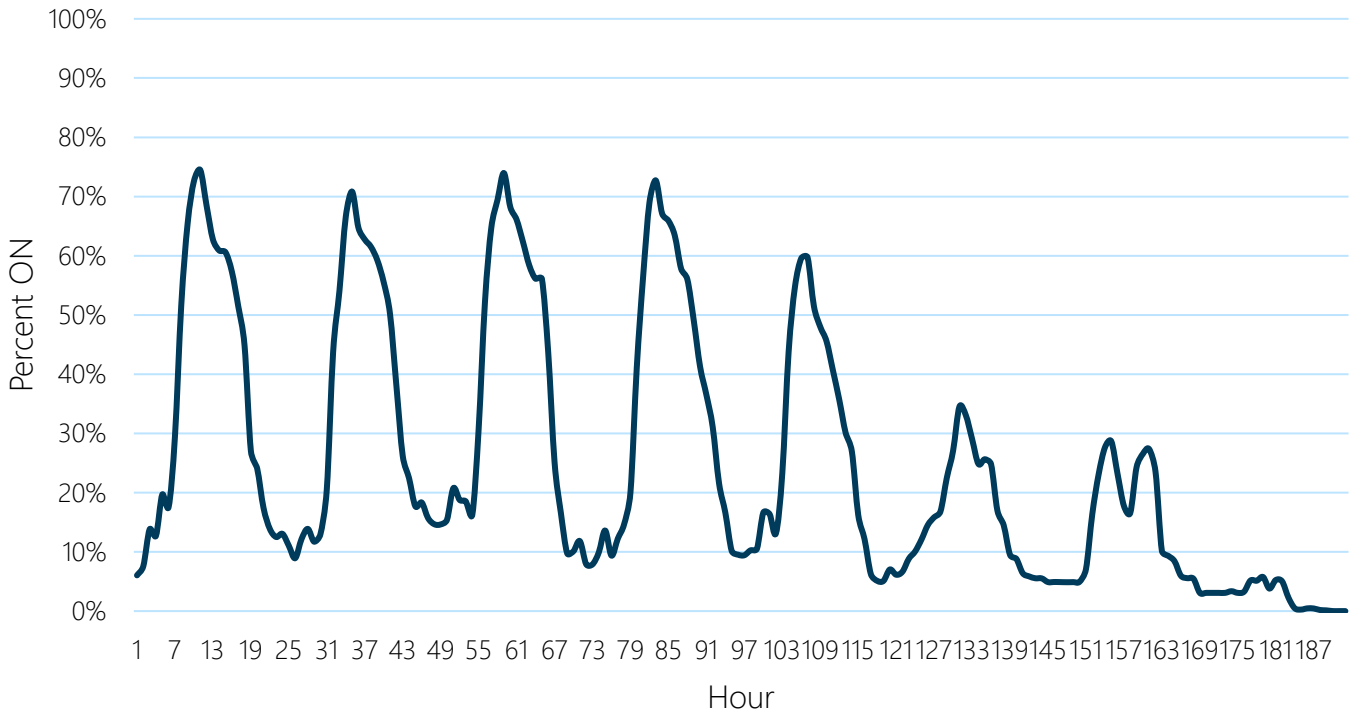


Figure 6-6: Restaurant Average Weekly + Holiday Schedule

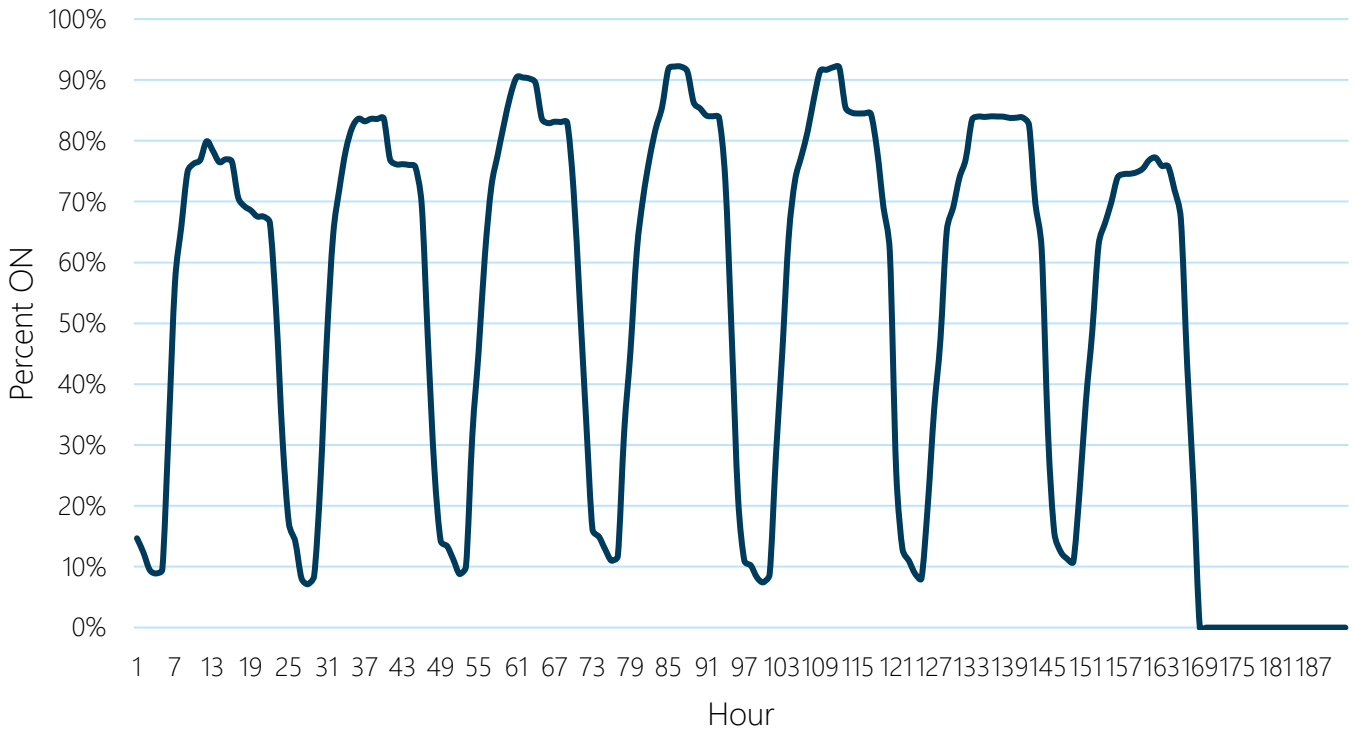


Figure 6-7: Small Office Average Weekly + Holiday Schedule

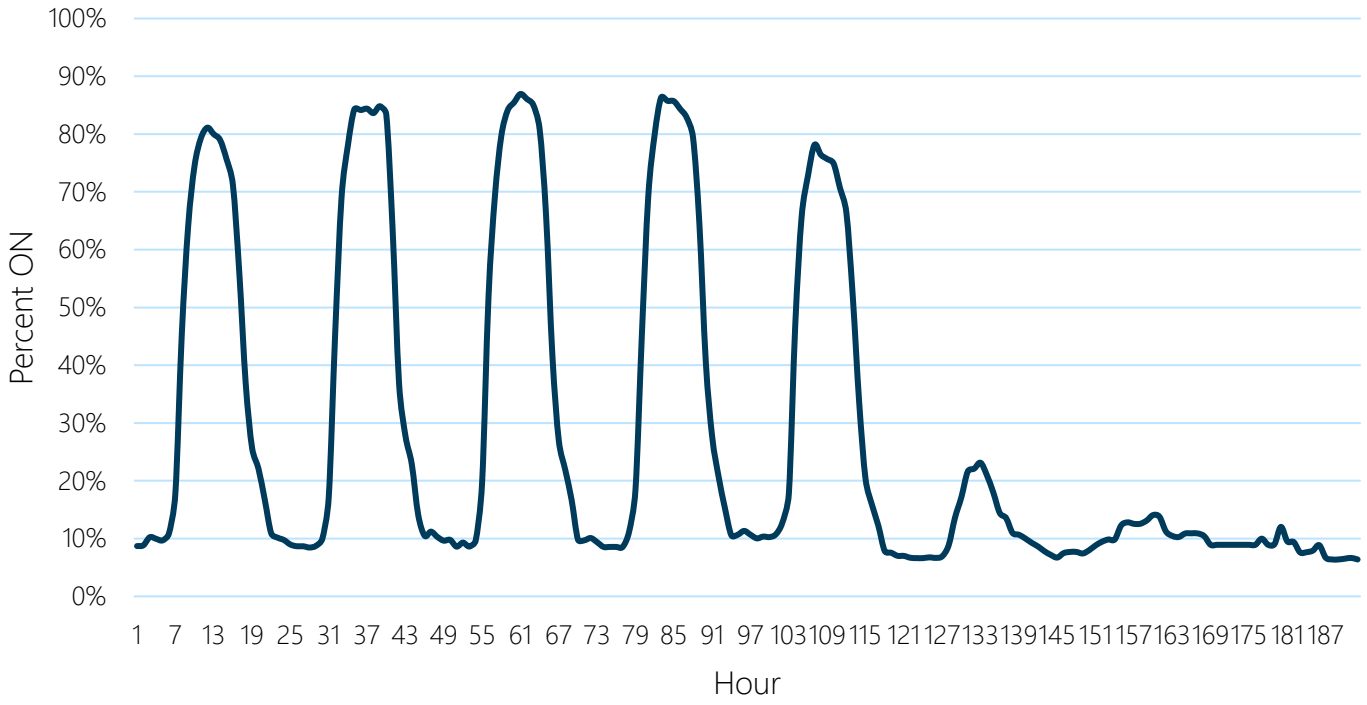


Figure 6-8: Small Retail Average Weekly + Holiday Schedule

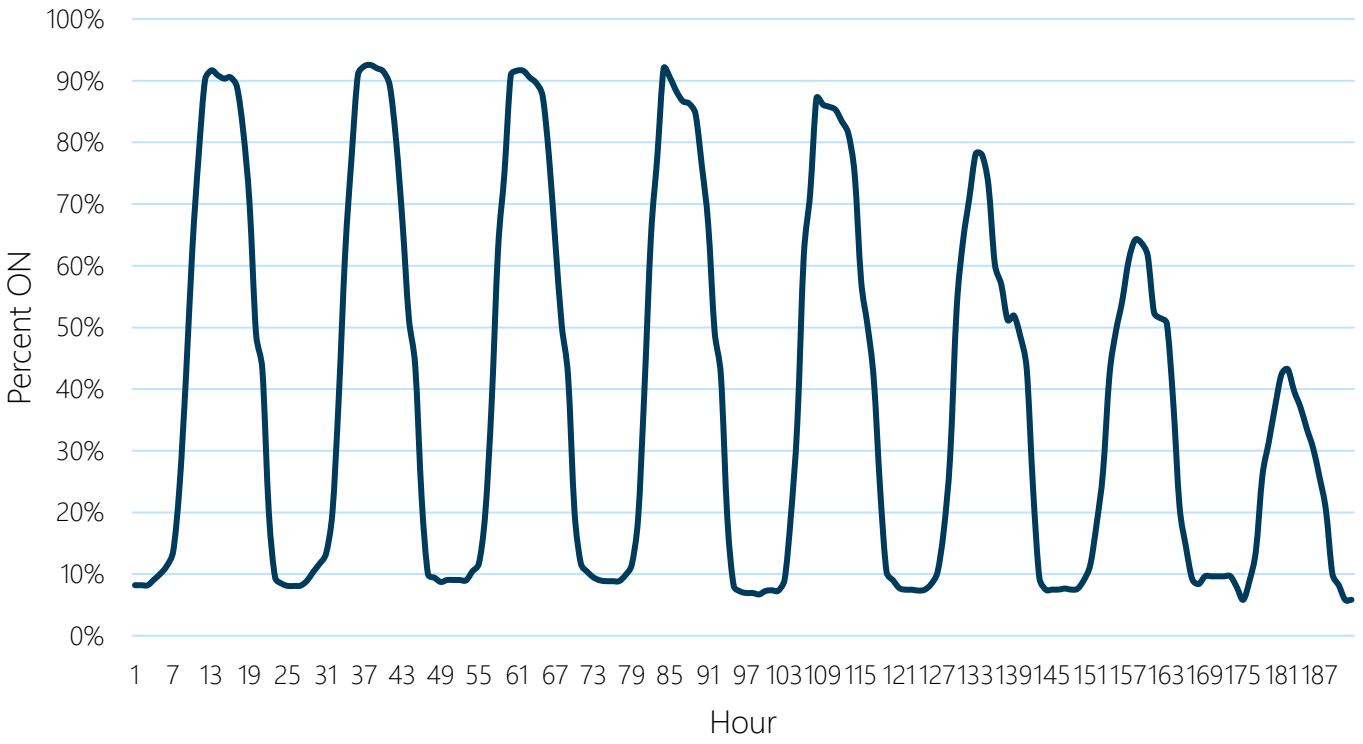


Figure 6-9:: University Average Weekly + Holiday Schedule

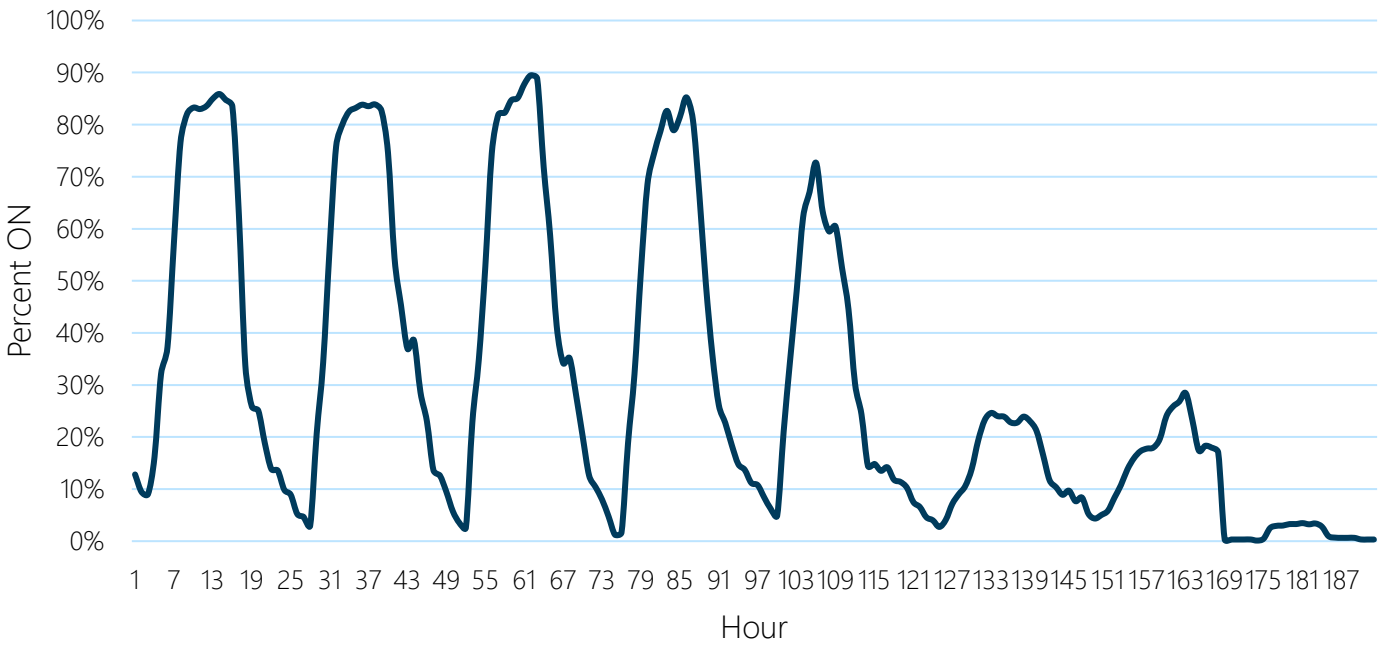
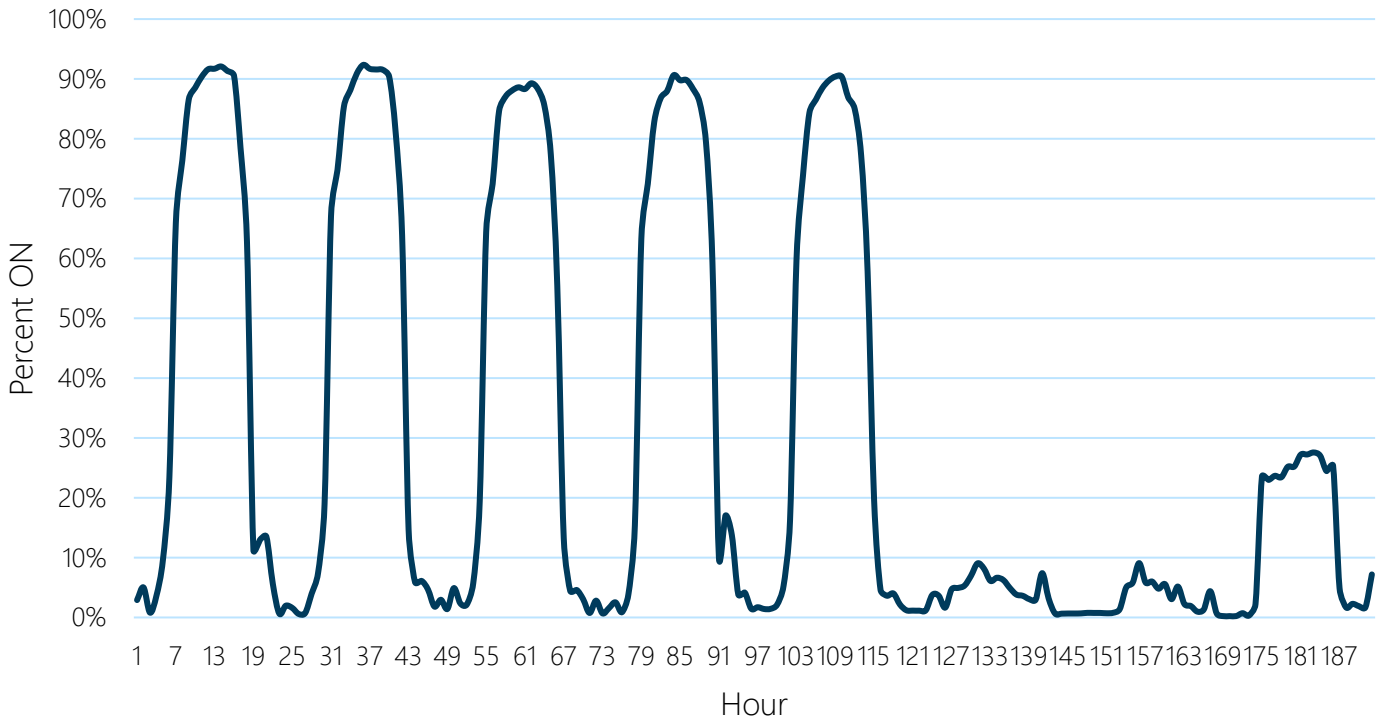


Figure 6-10: Warehouse Average Weekly + Holiday Schedule



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