



**PROGRAM BENCHMARKING, COST EFFECTIVENESS TESTING, AND BEST PRACTICES
RECOMMENDATIONS OF TEXAS GAS SERVICE (TGS) ENERGY EFFICIENCY PROGRAMS**

**PRESENTED BY ADM ASSOCIATES, INC. TO THE RESOURCE MANAGEMENT COMMISSION
NOVEMBER 17, 2020**



PRESENTATION OUTLINE

- 
- ADM Background
 - Natural Gas Utility Benchmark Research
 - Cost Effectiveness Review of 2018 TGS Programs
 - Evaluation, Measurement, & Verification (EM&V) Best Practices
 - TGS Customer Survey

ADM BACKGROUND

ADM Associates, Inc.

- Founded in 1979.
- Longest-running energy evaluation firm in the United States still operating under its founding leadership.
- Areas of expertise include:
 - Energy efficiency program evaluation;
 - Demand response program evaluation;
 - Process evaluation; and
 - Planning and regulatory support.

NATURAL GAS UTILITY BENCHMARK RESEARCH

Overview

- Natural gas utilities that were selected for the benchmarking study share common factors with TGS such as natural gas annual sales, customer demographics, conservation program tenure, regulatory guidelines, and similar climate zone.
- Twelve utilities were contacted; a total of 6 utilities, including TGS, participated in the interview about their programs and current practices.
- Five out of the six utilities are in the southwest or west coast regions. One of the six utilities is located on the east coast.
- The utilities interviewed allowed for benchmarking of the most critical TGS Program attributes.

NATURAL GAS UTILITY BENCHMARK RESEARCH

Program Attributes of Benchmark Utilities

- Most utilities that were interviewed offer residential appliance, low-income weatherization, residential new construction, low-flow water-saving device, and commercial programs.
- Several utilities offer mid-stream appliance programs, or mid-stream commercial food-service equipment programs.
- Most utilities have a third-party program implementor for commercial sector programs, but not for residential sector.
- Most utilities have strong trade ally networks.
- Some of the natural gas utilities partner with the electric utility in the service territory to market programs and provide improved services and rebate offerings.

NATURAL GAS UTILITY BENCHMARK RESEARCH

Research Findings

- Partnership with Austin Energy continues to be beneficial when marketing and implementing the programs. Utilities interviewed noted that working with the electric utility in the same territory will provide customers with more rebate options and better services.
- Having a third-party implementer is common among natural gas utilities, and third-party implementers help utilities with a range of activities including program implementation, data tracking, marketing, and engineering savings calculations.
- Flexibility and simple processes in the rebate application process have helped utilities achieve success in terms of reaching savings and program participation goals.

NATURAL GAS UTILITY BENCHMARK RESEARCH

Recommendations

- Continue to explore opportunities for collaboration with the electric utility to help market the programs, provide improved services, and provide rebate offerings.
- Continue to offer flexibility in the rebate application process and explore additional ways for customers to participate in the programs.
- If pursuing a food service equipment pilot program, consider offering a midstream delivery channel as well as a traditional rebate application process.
- Consider implementing a residential midstream appliance program which can connect the utility with local retailers and result in customers purchasing more energy efficient equipment as well as enhancing relationships with local retailers.
- Consider building or enhancing existing trade ally networks to improve program marketing efforts. Trade allies often interact with customers and can be beneficial by promoting program offerings.

COST EFFECTIVENESS REVIEW

Research Findings

- Overall, the TGS outside expert and ADM cost effectiveness results were consistent and closely aligned.
- TGS outside expert appeared to use reasonable assumptions for incremental costs and equipment effective useful life (EUL).
- A review of tankless water heater installation costs for TGS and other utilities revealed that TGS customers had paid similar amounts for the purchase and installation of tankless water heaters.
- TGS incentive amounts for rebated tankless water heater installations appeared reasonable based on a comparison with Arkansas Oklahoma Gas Company (AOG), Black Hills Energy Arkansas (BHE), and CenterPoint Arkansas and Oklahoma (CPA & CPO).

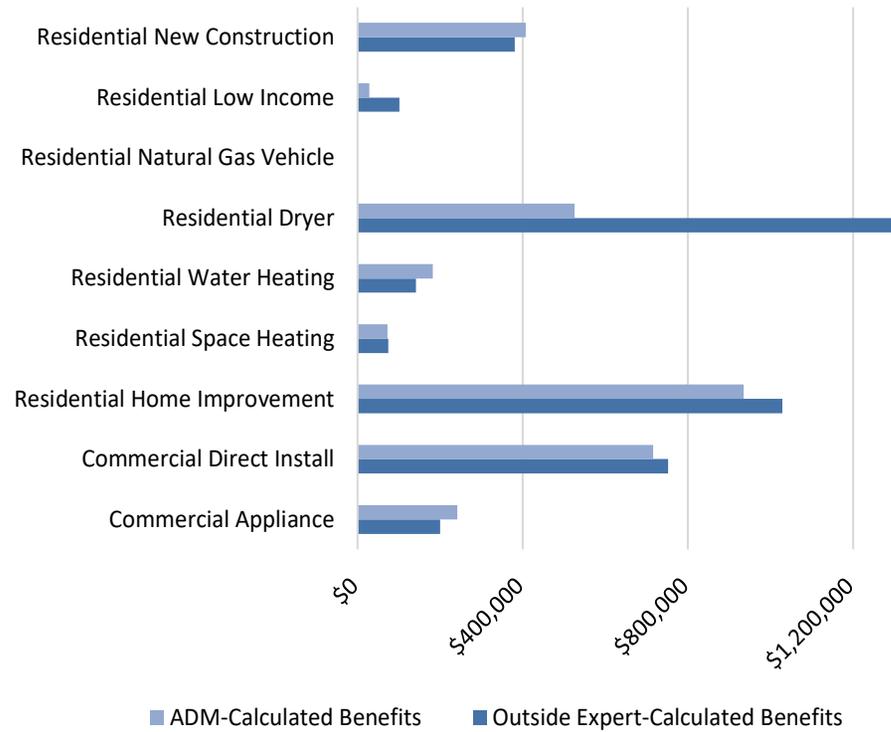
TANKLESS WATER HEATER INCENTIVE AMOUNTS COMPARISON

Equipment Type	TGS	AOGC	BHE	CPA & CPO
Residential Tankless Water Heater	\$650	\$500	\$300	\$900
Commercial Tankless Water Heater	\$600	\$500	\$300	\$500

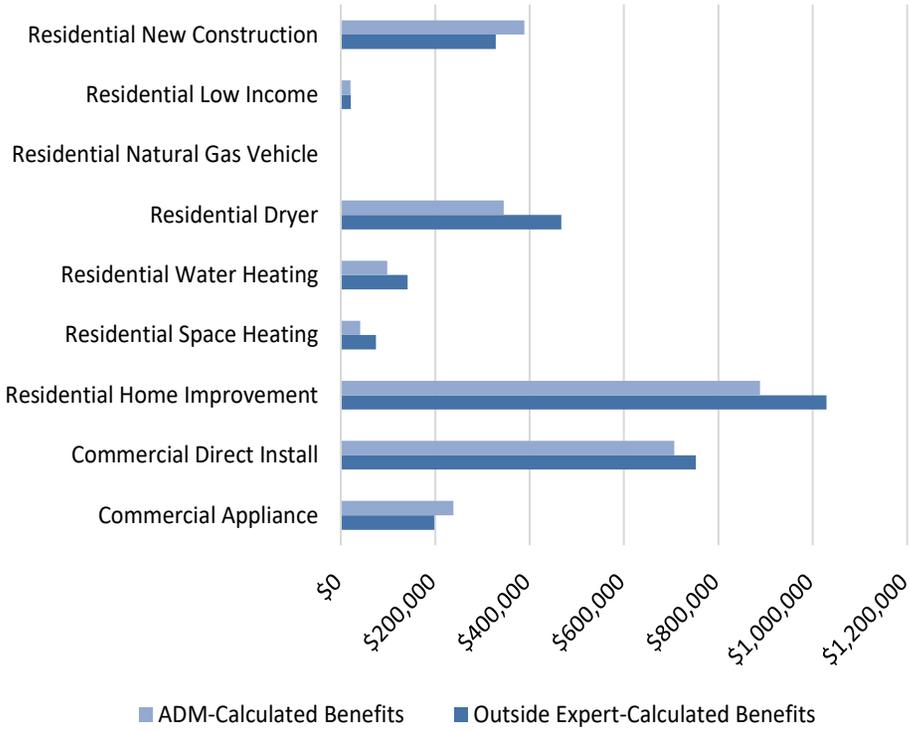
COST EFFECTIVENESS COMPARISON – 2018 PROGRAMS

TGS Program	TGS Outside Expert		ADM				
	TRC	PACT/UCT	TRC	PACT/UCT	PACT/UCT**	Net TRC Benefits	Net PACT/UCT Benefits
Commercial Appliance	7.42	5.81	8.38	6.99	6.99	\$187,056	\$204,242
Commercial Direct Install	4.45	4.45	4.28	4.18	4.18	\$547,373	\$537,551
Commercial Sector Total	1.99	1.96	2.00	1.95	1.95	\$734,429	\$741,793
Residential Home Improvement	2.57	2.58	2.40	2.23	2.23	\$577,153	\$490,254
Residential Space Heating	0.55	0.75	0.59	0.41	0.41	-\$6,158	-\$57,781
Residential Water Heating	0.67	0.41	1.21	0.28	0.28	\$30,833	-\$249,054
Residential Dryer	1.42	1.88	2.57	1.39	1.39	\$321,298	\$96,372
Residential Natural Gas Vehicle	0.00	0.00	0.00	0.00	0.00	\$0	-\$2,000
Residential Low-Income	1.28	0.08	1.46	0.07	0.07	-\$7,549	-\$250,927
Residential New Construction	0.78	0.46	1.23	0.54	0.54	\$76,343	-\$330,133
Residential Sector Total	1.11	0.80	1.25	0.69	0.69	\$991,920	-\$303,269
Portfolio Total	1.24	0.98	1.42	0.89	0.97	\$1,726,350	\$438,524
** Portfolio Total PACT/UCT ratio excluding Low-Income Program.							

COMPARISON OF TRC BENEFITS



COMPARISON OF PACT/UCT BENEFITS



COST EFFECTIVENESS REVIEW

Recommendations

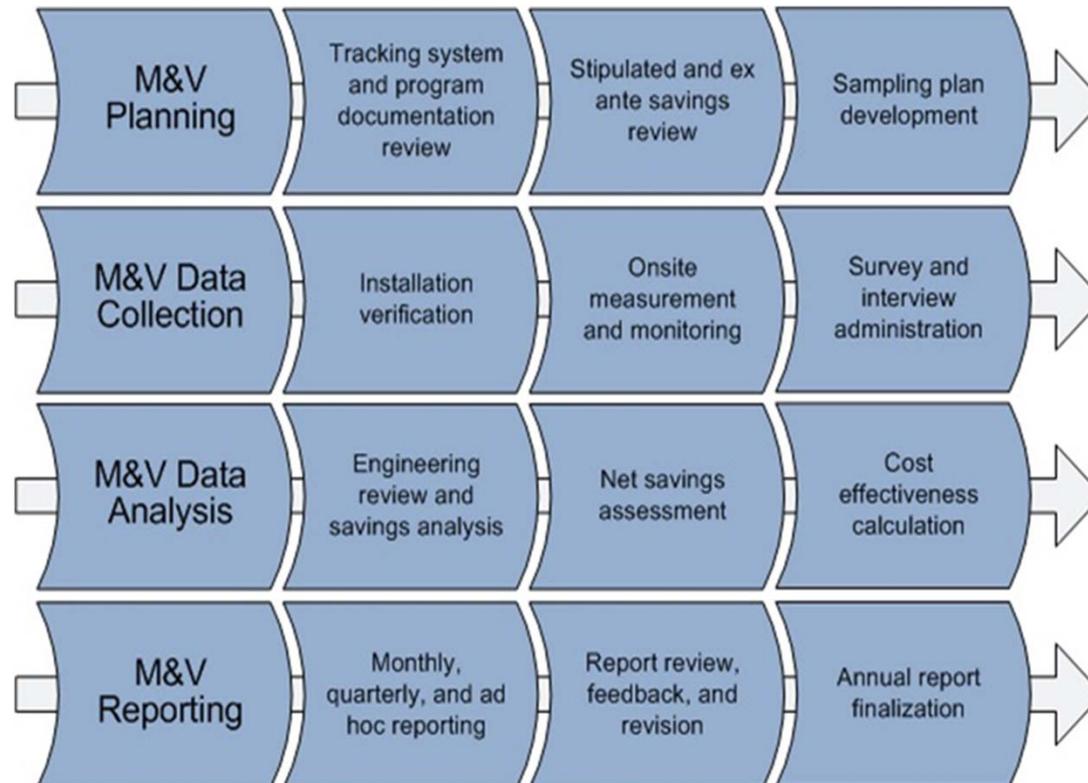
- Consider lowering the incentive for residential replacement and new construction tankless water heaters; a reasonable starting point for rebate adjustment would be in the \$500 range.
- Consider partnering with residential contractors who perform tankless water heater installations; this would help promote the program and further educate contractors and customers as well as increase participation in the water heater program.
- Increase participation in the commercial direct install program to help improve overall portfolio cost effectiveness; focus could be on steam trap equipment replacements.

EM&V BEST PRACTICES

Impact Evaluation Best Practices

- Develop EM&V plans;
- Review program materials and tracking data systems to support client deliverables;
- Develop samples for field EM&V and impact analysis;
- Collect on-site survey and EM&V data for sampled projects;
- Develop simple engineering algorithms for non-weather-sensitive measures and programs with smaller impacts, drawing on deemed savings values (as appropriate);
- Develop building energy simulation models for weather-sensitive measures within high impact programs (as appropriate);
- Perform billing analysis (as appropriate); and
- Present impact evaluation findings through written reports.

IMPACT EVALUATION ACTIVITIES



EM&V BEST PRACTICES

Process Evaluation Best Practices

- Providing feedback for the programs from the perspective of customers, trade allies, program administrators and other stakeholder groups.
- Performing market research to support program decisions about measures to offer, markets to target, and program implementation strategies.
- Providing actionable findings and recommendations that can positively impact the utility's programs.

TGS CUSTOMER SURVEY

Overview of Survey Effort

- A total of 200 customers were surveyed about TGS's residential rebate programs.
- One hundred eighty of the survey respondents were deemed non-low-income customers. Twenty of the survey respondents were low-income customers.
- ADM asked about household size and income level to determine if a respondent was at or below the 200% Federal Poverty Level to determine low-income respondents.
- All residential respondents interviewed had not participated in the rebate programs in the past five years and were considered non-participating customers.
- A total of 15 commercial customers provided complete responses to the survey
- Commercial customer have not participated in the programs in the past three years and were considered non-participating customers.

TGS CUSTOMER SURVEY

Research Findings

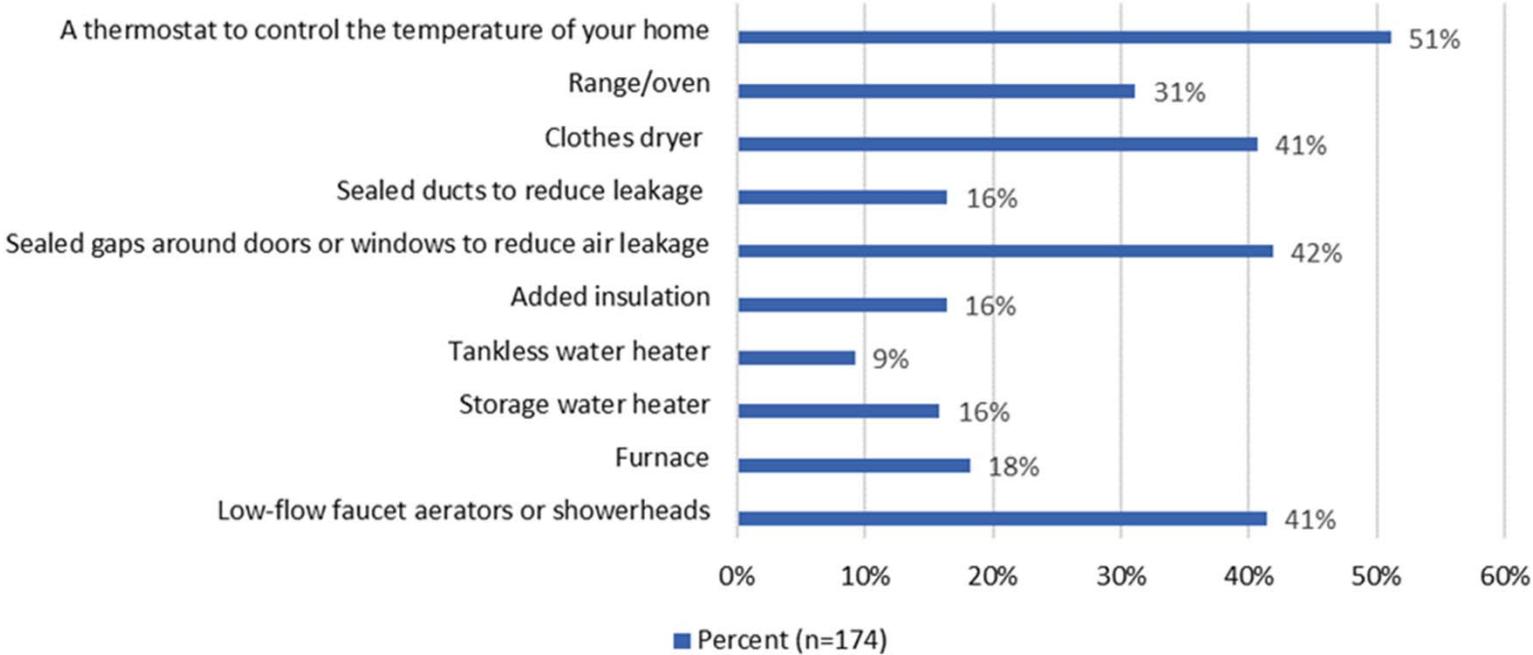
- Generally, customers are not aware of the rebates provided by TGS. For residential and non-residential customers, over fifty percent of respondents were unaware of the rebate programs offered.
- The majority of residential customers who had learned of the rebates or services learned of them through email or mail sources.
- Most of the non-residential customers who knew about the rebates learned about them through informational brochures and the TGS website.
- The majority of residential customers were interested in getting additional information on energy savings tips and energy efficiency rebate programs.
- Generally, non-residential customers have not upgraded or replaced natural gas equipment in the last three years and do not expect to receive a rebate from TGS for future replacements.

PROGRAM REBATE AWARENESS AND INTEREST IN ENERGY EFFICIENCY – RESIDENTIAL CUSTOMERS

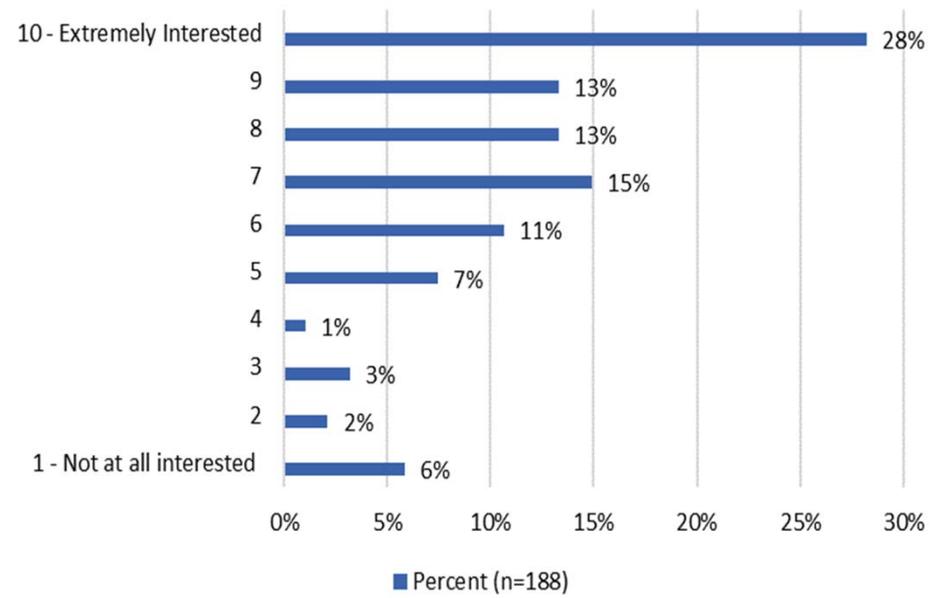
Response	Percent (n = 175)
Yes	27%
No	73%

Response	Percent (n = 116)
Very Interested	26%
Moderately interested	39%
Slightly interested	23%
Not at all interested	12%

MEASURES INSTALLED WITHOUT A REBATE – RESIDENTIAL CUSTOMERS



INTEREST IN HOME'S ENERGY EFFICIENCY – RESIDENTIAL CUSTOMERS



TGS CUSTOMER SURVEY

Research Findings – Low-Income Customers

- Smaller sample size compared to overall residential survey population (n=20).
- Overall, similar findings to residential survey population.

HOUSEHOLD SIZE AND INCOME – LOW-INCOME RESIDENTIAL CUSTOMERS

Response	Percent (n=20)
1 person	5%
2 people	30%
3 people	20%
4 people	25%
5 people	10%
6 people	5%
8 or more people	5%

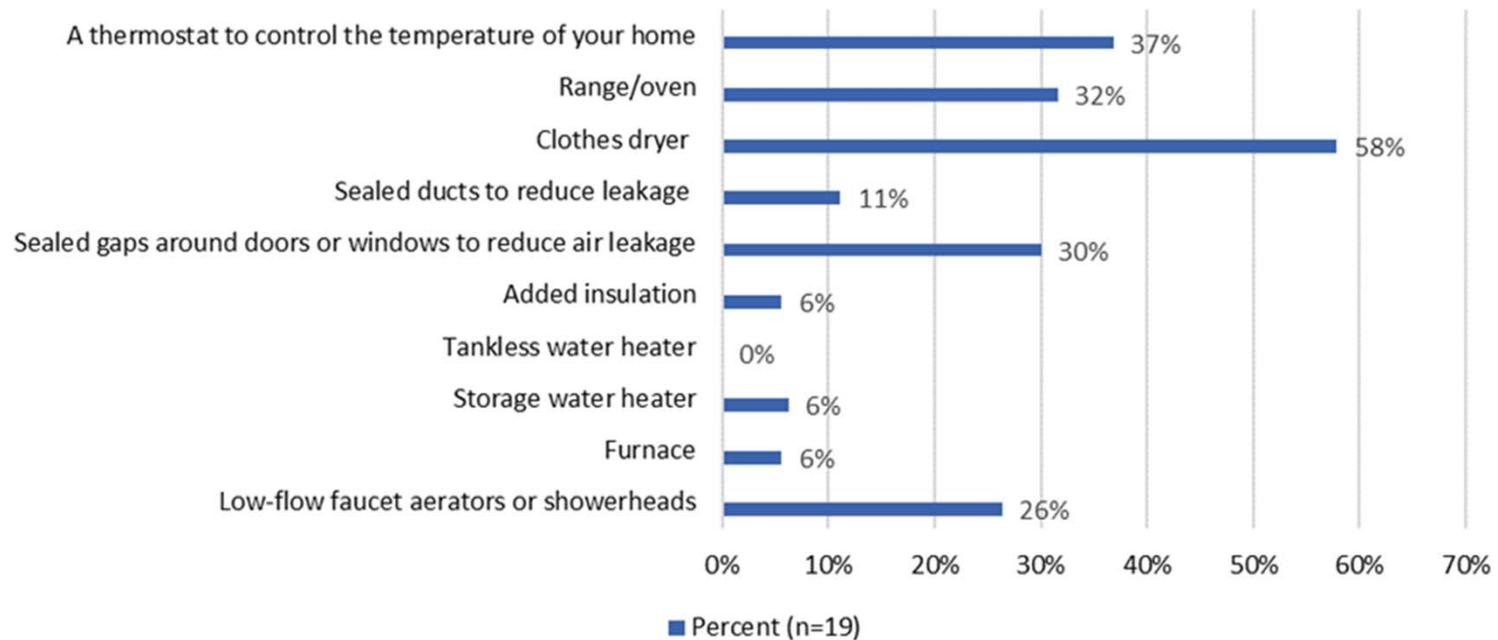
Response	Percent (n=20)
\$10,000 to less than \$20,000	35%
\$20,000 to less than \$30,000	15%
\$30,000 to less than \$40,000	25%
\$40,000 to less than \$50,000	15%
\$50,000 to less than \$75,000	10%

PROGRAM REBATE AWARENESS AND INTEREST IN ENERGY EFFICIENCY – LOW-INCOME RESIDENTIAL CUSTOMERS

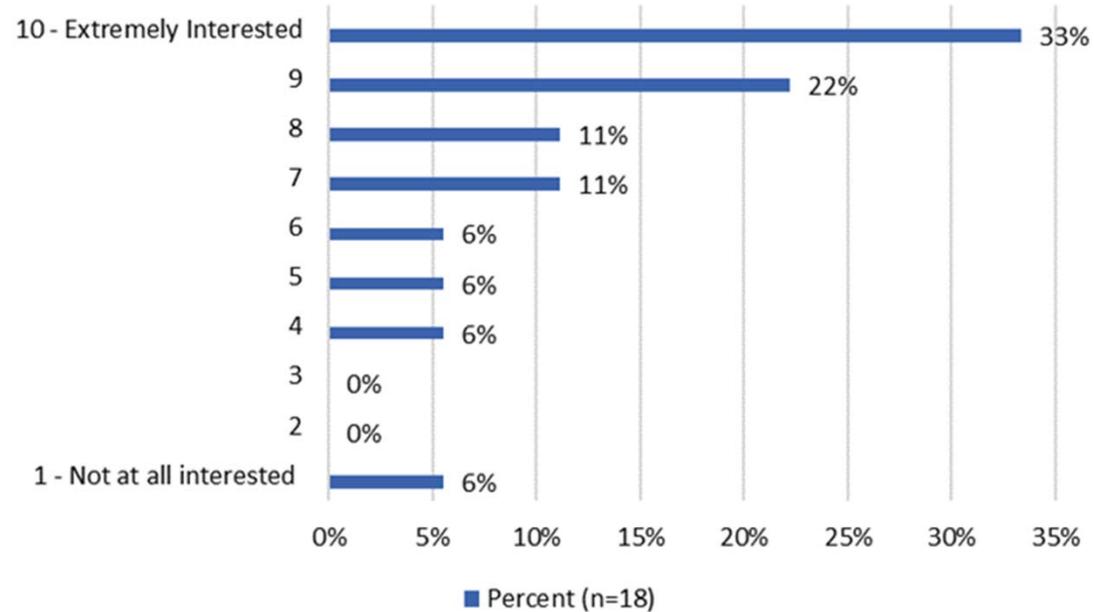
Response	Percent (n = 18)
Yes	11%
No	89%

Response	Percent (n = 19)
Very Interested	42%
Moderately interested	26%
Slightly interested	16%
Not at all interested	16%

MEASURES INSTALLED WITHOUT A REBATE – LOW-INCOME RESIDENTIAL CUSTOMERS



INTEREST IN HOME'S ENERGY EFFICIENCY – LOW-INCOME RESIDENTIAL CUSTOMERS



TGS CUSTOMER SURVEY

Research Findings – Non-residential Customers

- Small sample size (n=15).
- Overall, low rebate awareness among surveyed businesses.

BUSINESS TYPE AND OWNERSHIP –NON-RESIDENTIAL CUSTOMERS

Response	Percent (n = 15)
Professional Services (Office)	33%
Restaurant	20%
Grocery/convenience store	7%
Healthcare	7%
Industrial/manufacturing	7%
Lodging	13%
Other	13%

<i>Response</i>	<i>Percent (n = 15)</i>
Own and occupy the entire building	13%
Own the building and occupy part of it while leasing part to others	20%
Lease the space	67%

PROGRAM REBATE AWARENESS AND DECISION-MAKING ABILITY – NON-RESIDENTIAL CUSTOMERS

Response	Percent (n = 13)
Yes	38%
No	62%

Response	Percent (n = 15)
Make those decisions	60%
Provide input to others who make those decisions	40%

EQUIPMENT PURCHASE IN 2019 AND 2020, AND LIKELIHOOD OF SCHEDULING FACILITY WALK-THROUGH – NON-RESIDENTIAL CUSTOMERS

Response	Percent (n = 10)
Yes	20%
No	80%

Response	Percent (n = 14)
1 – Not at all likely	21%
2	7%
3	43%
4	15%
5 – Very likely	14%

TGS CUSTOMER SURVEY

Recommendations

- TGS should increase marketing of equipment rebates due to the low level of rebate awareness that customers reported.
- Marketing should be aimed at residential customers due to their interest in energy efficiency programs and actions. Contacting these customers can best be done via utility bill inserts, the utility website, or email communications.
- Since respondents have been purchasing and installing natural gas equipment, TGS should consider implementing a midstream program. Conducting a midstream program can connect the utility with local retailers and enhancing that relationship, as well as resulting in customers purchasing more energy efficient equipment and raising customer awareness of TGS programs.
- All non-residential customers who responded stated that they have not upgraded natural gas equipment in the last 2-3 years. This could be due to a lack of energy efficiency education, or lack of outreach by the program implementor.



QUESTIONS OR COMMENTS?