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June 26, 2024

Ms. Melanie Sandoval
New Mexico Public Regulation Commission
P. O. Box 1269
Santa Fe, New Mexico 87504-1269

RE: New Mexico Gas Company Inc.'s 2023 Energy Efficiency Program Annual Report
NMPRC Case No. 22-00232-UT

Dear Ms. Sandoval:

Pursuant to New Mexico Public Regulation Commission ("NMPRC" or the "Commission") Case No. 22-00232-UT and Rule 17.7.2.8 NMAC, New Mexico Gas Company, Inc ("NMGC" or the "Company") hereby submits its 2023 Energy Efficiency Program Annual Report ("2023 Report"). The Company's 2023 Report includes the Annual Reconciliation, Rate 1-15 calculations, and Evaluation of the Company's 2023 Energy Efficiency Programs - Measurement and Verification Report ("M&V Report") submitted by the independent program evaluation firm EcoMetric Consulting LLC, as designated by the Commission.

In accordance with NMPRC Rule 17.7.2.14 NMAC, NMGC will post separately its 2023 Report and M&V Report to its website at www.nmgco.com.

If you have any questions or require any additional information, please do not hesitate to contact me at (505) 697-3831. Thank you for your assistance in this matter.

Sincerely,

/s/Lisa Trujillo

Lisa Trujillo
Project Manager, Regulatory Affairs

Enclosures

cc: Certificate of Service

2023

Energy Efficiency Program

Annual Report

June 26, 2024

NEW MEXICO GAS COMPANY, INC.

2023 Energy Efficiency Program Annual Report

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NEW MEXICO GAS COMPANY, INC.

2023 Energy Efficiency Program Annual Report

Introduction

New Mexico Gas Company, Inc. ("NMGC" or the "Company") hereby submits its 2023 Energy Efficiency Program Annual Report ("2023 Report") for the period of April 1, 2023, through March 31, 2024 ("2023 Program Year"). Additionally, included as Appendix C to the 2023 Report is the independent evaluator's, EcoMetric Consulting ("EcoMetric"), final report entitled "PY 2023 Evaluation of New Mexico Gas Company Energy Efficiency Programs," ("M&V Report"), which was completed on June 21, 2024.

On August 31, 2022, NMGC filed its 2023 - 2025 Program Plan ("Program") with the New Mexico Public Regulation Commission ("NMPRC" or "Commission") docketed as Case No. 22-00232-UT. The 2023 Program was approved by the NMPRC on March 22, 2023, and became available to customers on April 1, 2023. The 2023 Report covers all costs incurred in the implementation of the programs and customer participation during the 2023 Program Year.

The following programs and offerings are included in the 2023 Report:

(1) Water Heating – tankless water heaters, condensing tank water heaters, high efficiency showerheads and faucet aerators and pipe wrap measures.

(2) Space Heating – furnaces, boilers, insulation and smart thermostat measures.

(3) New Homes – incentives to home builders to build high performance homes through several methodologies including high efficiency furnaces, boilers and water heaters, tightening of envelope and ductwork, location of equipment, and increased insulation values.

(4) Income Qualified – multiple natural gas saving measures for individual low-income residences including Native American and Manufactured Home communities.

(5) Multi-Family – multiple natural gas saving measures for both low-income and market-rate multi-family facilities.

(6) Efficient Buildings – multiple natural gas saving measures for commercial and school facilities including direct install, prescriptive and custom.

(7) Home Energy Reports – reports delivered to NMGC customers that provide energy savings information and recommendations for their specific home.

The 2023 Report includes an Executive Summary that presents a high-level assessment of the program performance for the 2023 Program Year, followed by a summary of the findings of the M&V Report and the impacts on the future of the programs. The 2023 Report also includes specific program information as required by 17.7.2 NMAC ("EE Rule") as well as additional program information.

Executive Summary

This is NMGC's fifteenth annual report on the Company's Program, that includes detailed results of the Company's seven programs for the 2023 Program Year as approved in NMPRC Case No. 22-00232-UT.

The following table reflects the total number of customer participants, savings, and program costs for the 2023 Program Year. The savings for each program are net savings (which are adjusted for free-ridership) derived from the final conclusions in the M&V Report reached by EcoMetric's evaluation of NMGC's 2023 Program Year.

Program Savings and UCT Results per M&V

Program	Participants*	Total Annual Net Savings (Therms)**	Lifetime Net Savings (Therms)**	Total Program Costs	UCT***	Cost per Therm Saved
Water Heating	24,981	372,169	4,117,985	$1,233,913	1.65	$0.30
Space Heating	12,074	196,475	3,534,499	$1,094,736	1.40	$0.31
New Homes	1,388	352,456	8,106,477	$1,239,494	2.60	$0.15
Income Qualified	599	267,607	4,053,934	$2,497,753	0.90	$0.62
Multi-Family	1,238	332,353	5,528,747	$2,042,994	1.45	$0.37
Efficient Buildings	235	1,572,461	18,705,728	$4,086,833	2.25	$0.22
Home Energy Reports	144,000	61,950	61,950	$687,235	0.10	$11.09
Portfolio Costs	N/A	N/A	N/A	$151,502	N/A	N/A
Total		3,155,471	44,109,320	$13,034,461	1.63	$0.30

**Multi-Family are the number of units and Efficient Buildings participation are projects associated with those programs*

***Net savings adjusted for free-ridership and derived from M&V Report*

****Low UCT ratios for the Income Qualified and Home Energy Reports are addressed below*

Although the overall portfolio Utility Cost Test ("UCT") ratio of 1.63 surpassed the required UCT criteria of 1.00, the Income Qualified program and the Home Energy Reports program did not achieve the 1.00 UCT as stand-alone programs.

The Income Qualified program did not meet the UCT because, as described further in the Regulatory Proceedings section of this report, the funding for the program was substantially increased. In NMPRC Case No. 22-00232-UT, NMGC was required to consult with the Office of the Attorney General, now the New Mexico Department of Justice ("NMDOJ"), and revise the Income Qualified program to address the backlog of weatherization requests of qualified customers that the New Mexico Mortgage Finance Authority ("MFA") was experiencing. NMGC met with the NMDOJ and MFA and came up with a proposal to provide MFA with an additional $300,000 in funding to help reduce MFA's backlog. The additional funding would provide eligible NMGC customers with weatherization/energy-related home repair services that would normally be provided using Department of Energy ("DOE") funds, but which would not be utilized for these particular customers due to DOE prioritization criteria. Since the additional funding would increase costs but not necessarily increase savings, NMGC expected that the Income Qualified

program would most likely not meet the 1.00 criteria, but NMGC expected that the overall portfolio would continue to satisfy the UCT. The proposal for additional funding was reported to the NMPRC in June 2023.

NMGC received approval to begin implementing the new Home Energy Reports program in the 2023 Program Year. The Home Energy Reports program was not expected to achieve significant savings the first year due to start-up costs and initial program development. The program is now on track and NMGC expects the program to achieve its own UCT score of 1.00 or greater for Program Year 2024.

The following table indicates the Program's costs by category for its energy efficiency portfolio during the 2023 Program Year.

Program Year 2023*	Total Actual Costs
Administration (Internal and External)	$5,353,585
Promotion/Marketing	$234,054
Measurement and Verification	$241,304
Rebates	$7,054,017
Portfolio Costs	$151,502
Total	$13,034,461
*Program Year 2023 - NMPRC Case No. 22-00232-UT	

Administration

The figures in this category include both internal and external administration of the Program. Internal administration is the labor and administrative costs for the NMGC Energy Efficiency Department Staff ("EE Staff"), expended on energy efficiency programs in research, development and oversight of the Program, as well as NMPRC compliance reporting and ongoing interface with the Company's program administrators and M&V activity. External administration are costs associated with third party program administration of NMGC's programs. ICF Resources, LLC ("ICF") administers the Water Heating, Space Heating, New Homes and Home Energy Reports programs. MFA administers the Income Qualified program, including the Weatherization Assistance Program. EnergyWorks administers the Native American Energy Efficiency, Manufactured Home Communities, and Community Energy Efficiency Programs. ICAST administers the Multi-Family program and CLEAResult administers the Efficient Buildings program. All five of the third-party program administrators are under contract with NMGC.

Third-party administration costs include labor and other direct expenses related to program implementation planning, program marketing and website materials development and management, outreach and marketing of the programs to eligible participants, energy efficiency opportunity identification and assessment, energy engineering and energy savings validation, some direct installation of high efficiency faucet aerators and low flow pre-rinse spray valves, rebate processing and quality control inspections. The cost for ICF, MFA, EnergyWorks, ICAST and CLEAResult to review rebate applications and determine eligibility of customers for their respective programs is also included in the third-party administration costs. To the extent that these contracts require the third parties to conduct promotional activities acceptable to NMGC, those promotional costs are considered third-party administrative costs.

Promotion/Marketing

This cost category contains all promotional costs expended on the Program including brochures, direct mail costs, newspaper, radio, television, media design and production expended by NMGC and all other promotional or marketing costs not included in third-party contracts.

Measurement and Verification

The M&V costs include final invoices received from the previous evaluator, Evergreen Economics, Inc., since April 1, 2023, for performing final M&V activities for the 2022 Program Year and their annual independent program evaluation report for the 2022 Program Year, completed June 2023. Also included in the costs are invoices received and paid through March 31, 2024, from EcoMetric for their continued evaluation of NMGC's 2023 Program Year.

Rebates

The rebate cost category includes all rebates paid directly to participating customers or for measures and services provided under the Income Qualified, Multi-Family and Efficient Buildings programs. Labor and materials necessary for some direct-install measures are also included in this category.

Portfolio Costs

This cost category includes all costs related to the energy efficiency portfolio but not directly associated to an individual program such as legal expenses, training, research and development, and general education activities.

The EE Rule requires that an independent evaluator conduct M&V assessments of all energy efficiency programs. For the 2023 Program Year, the NMPRC selected EcoMetric to provide an M&V Report on all seven of the energy efficiency programs offered by NMGC and approved by the Commission in NMPRC Case No. 22-00232-UT.

Tariff Collections

As of April 1, 2023, when the 2023 Program Year began, NMGC was charging eligible sales service and transportation customers the approved Rider rate of $0.0185/therm (Advice Notice No. 90), for recovery of program costs. The rate remained in effect from April 1, 2023, through July 31, 2023. On June 24, 2023, NMGC submitted Advice Notice No. 94, updating the rate charged

by Rate No. 1-15 - Rate Rider No. 15 Energy Efficiency Rider ("Rider 15") in alignment with the annual reconciliation. This Advice Notice was accompanied by supporting testimony and exhibits which included the annual Rider 15 reconciliation report pursuant to 17.7.2.13(C) NMAC, requiring reconciliation of collections from the prior year, along with proposals to make up under or over-collections. The new rate of $0.0304/therm for Rider 15 was approved with an effective date of the first billing cycle for August 2023. Total cost recoveries through Rider 15 from April 1, 2023, to March 31, 2024, were $13,826,798. Rider 15 continues at the current rate of $0.0304 as of this filing.

Tariff Reconciliation

Pursuant to the provisions of 17.7.2.13 NMAC and NMGC's Second Rule No. 37 – Rate Rider No. 15 Details ("Rule No. 37"), which require reconciliation of collections from the prior year, along with proposals to make up under or over-collections, attached as Appendix B is the Program Reconciliation and Cost Recovery Calculation and the Program Cost Rider Calculation reports.

As contained in Appendix B, the beginning balance in the Energy Efficiency account on April 1, 2023, was an over-collection of $1,276,791. Expenses incurred between April 1, 2023, through March 31, 2024, totaled $12,539,089 (although additional expenses attributed to the 2023 Program Year were incurred after March 31, 2024). Additional expenses of $495,372 were incurred after March 31, 2024, but attributable to the 2023 Program Year, mostly due to invoices received from customers after March 31, 2024. Actual carrying charges of $24,585 charged to customers for the same period increased the net expense to $12,563,674. Total collections for the period totaled $13,826,798. Collections included $845,248 for Incentives. Collections not including Incentives were $12,981,550, resulting in a net over-collection of $417,876. Including the beginning balance of an over-collection of $1,276,791 on April 1, 2023, the total net over-collection on March 31, 2024, was $1,694,667.

Based on the above and pursuant to NMPRC Case No. 22-00232-UT, approving NMGC's 2024 Program Year budget of $16,310,201, NMGC's calculated Surcharge Factor of $0.0257/therm for the 2024 Program Year will, upon approval, be implemented and charged through the 2024 Program Year for the recovery of the Program costs.

Regulatory Proceedings

NMGC filed its energy efficiency application for the 2023 – 2025 Program Years on August 31, 2022. It subsequently was assigned NMPRC Case No. 22-00232-UT.

The Hearing for NMPRC Case No. 22-00232-UT was held January 9, 2023. The Hearing Examiner provided a Recommended Decision ("RD") to the Commission and the RD was approved through a Final Order on March 22, 2023. Included in the Final Order was a directive for NMGC to consult with the NMDOJ to address MFA's weatherization waiting list and report no later than July 1, 2023, as to how it plans to reduce the list.

NMGC consulted with the NMDOJ and MFA and agreed that NMGC would provide MFA an additional $300,000 to specifically target reducing the waiting list. The agreement reached included the understanding that the UCT for the Income Qualified program would most likely result in the program not reaching the 1.00 criteria but would not necessarily have an adverse effect on the overall portfolio's UCT. The agreement was reported to the NMPRC in June 2023.

NMGC received the final M&V Report for its 2023 Program Year from EcoMetric on June 21, 2024. On June 26, 2024, NMGC filed with the Commission its M&V and its 2023 Program Year Annual Reports.

Also, on June 26, 2024, NMGC submitted a report on the rate charged by Rider 15. The Rider 15 reconciliation report is pursuant to 17.7.2.13(C) NMAC, requiring reconciliation of collections from the prior year, along with proposals to make up under or over-collections. NMGC filed Advice Notice No. 99 to decrease the Energy Efficiency Fee to $0.0257 per therm as of the first billing cycle for August 2024.

Summary of M&V Report Findings

Background and Purpose of Independent Evaluation

The NMPRC selected EcoMetric to perform an independent evaluation, measurement, and verification of NMGC's Energy Efficiency Programs for Program Years 2023 through 2025. NMGC and its program administrators worked with EcoMetric to provide the data necessary to complete the 2023 M&V Report. This included providing rebate processing files, budget data by program, net and gross savings assumptions, and avoided cost information.

The primary purpose of the independent evaluation is to assess the cost-effectiveness of the programs using the UCT. A second purpose of the evaluation is to perform a basic process evaluation of the program to determine customer satisfaction with how the programs operated.

2023 M&V Report

The 2023 Program Year evaluation consists of an analysis of all seven programs offered. Attached as Appendix C is the complete M&V Report.

Summary of Findings and NMGC Comments

EcoMetric concluded that the overall portfolio UCT for the seven programs was 1.63. NMGC believes that EcoMetric has conducted a professional assessment of the seven programs offered under the 2023 Program Year and agrees with their findings and recommendations. Below is a summary of their findings and recommendations along with NMGC's comments.

Water Heating Program

- The M&V evaluation team determined that the program received a UCT ratio of 1.65. Net annual therm savings were estimated to be 228,464. M&V verified actual savings of 372,169. There were no recommendations made by the evaluation team.

Space Heating Program

- The M&V evaluation team determined that the program received a UCT ratio of 1.40. Net annual therm savings were estimated to be 220,800. M&V verified actual savings of 196,475. There were no recommendations made by the evaluation team.

New Homes Program

- The M&V evaluation team determined that the program received a UCT ratio of 2.60. Net annual therm savings were estimated to be 400,752. M&V verified actual savings of 352,456. There were no recommendations made by the evaluation team.

Income Qualified Program

- The M&V evaluation team determined that the program received a UCT ratio of 0.90. Net annual therm savings were estimated to be 528,208. M&V verified actual savings of 267,607. There were no recommendations made by the evaluation team.

Multi-Family Program

- The M&V evaluation team determined that the program received a UCT ratio of 1.45. Net annual therm savings were estimated to be 372,969. M&V verified actual savings of 332,353. There were no recommendations made by the evaluation team.

Efficient Buildings Program

- The M&V evaluation team determined that the program received a UCT of 2.25. Net annual therm savings were estimated to be 1,570,777. M&V verified actual savings of 1,572,461.
- The M&V evaluation team modified savings for three projects in the sample that installed efficient commercial kitchen gas fryers. The supplied energy savings calculations utilized the average value of gas savings (therms) for various facility types for both the Standard and Large Vat fryers in the savings algorithm. The modification decreased the savings for the projects.
    - **Recommendation:** Use the deemed savings values listed in the NMGC Commercial Kitchen Work Papers for the applicable facility type. The

implementation team was made aware of this finding and is working with the evaluation team to improve their methodology to accurately capture savings.

- **NMGC Response:** NMGC's implementer will utilize the Work Papers when applicable when the New Mexico Technical Resource Manual ("TRM") does not adequately apply. The Work Papers will enable the savings to be more specific to the establishment where the unit was installed. The implementer will continue to work with the evaluation team to improve their methodology.

- The M&V evaluation team was unable to locate the source of the claimed savings for a faucet aerator project (EA-0003022643) and a steam trap project (EA-0002203525). The project files provided did not list the claimed savings value listed in the tracker.
  - **Recommendation:** Provide calculation files or workbooks with claimed savings for projects that the evaluation team can review.
  - **NMGC Response:** NMGC's implementer will provide the evaluation team with the calculation files or workbooks for review as requested.

- The M&V evaluation team adjusted the savings for a chiller replacement project (EA-0001553249) where the implementer had added an electric penalty to account for the incentive the customer received from the electric utility.
  - **Recommendation:** The New Mexico natural gas UCT does not require considering the electric penalty for projects with both electric and gas savings. The evaluation team recommends that the implementation team remains cognizant of projects that receive an incentive from both gas and electric utilities.
  - **NMGC Response:** NMGC's implementer will only assume gas savings as long as the cost-effectiveness test remains the UCT**.**

Home Energy Reports

- The M&V evaluation team determined that the program received a UCT ratio of 0.10. Net annual therm savings were estimated to be 1,210,000 when the program had a full year of operation. M&V verified actual savings of 61,950 for two months in Program Year 2023.

The M&V evaluation team had the following observations:

- Verified savings for the Home Energy Reports program for Program Year 2023 were 61,950 therms. The evaluation team expects more savings in future program years, as treatment was only active for two months during Program Year 2023.
- If NMGC is interested in the relative effectiveness of the print and email treatment, separate control groups should be identified by providing the billing method of the control (presumably, billing method was used to determine delivery mode in the treatment group).

- The evaluation team suspects that some of the trends in the pre period may be caused by the fact that the control group (10,000) was so small compared to the treatment group (140,000).
    - **NMGC Response:** NMGC agrees that the program is expected to see more savings in 2024 as the program ramps up to full speed and customers begin receiving reports through the fall and winter. Once the program has a full year of savings and data to rely on, NMGC would be interested if one delivery mode has better success than the other. NMGC and the program implementer have held conversations with the evaluation team on the appropriate size of the control group compared to the treatment group and will adjust as necessary as the number of customers receiving the reports is expected to grow.

In summary, this is NMGC's fifteenth evaluation of its programs and the fifteenth time that M&V has concluded that the Company's program portfolio is cost-effective. The program portfolio cost/benefit analysis was determined to have a UCT ratio of 1.63. NMGC believes this corroborates the adjustments proposed and taken each year to enhance its portfolio and make the programs more cost-effective.

NMGC concurs with EcoMetric's report that overall NMGC is operating high quality programs that are achieving significant energy savings and producing satisfied participants.

It is important to note that under the 2023 Program Year, a portion of the savings under the Efficient Buildings program were through direct-install measures. These direct-install measures are energy efficient showerheads, pre-rinse valves and faucet aerators that reduce water usage. Combined with the Water Heating, Income Qualified and Multi-Family programs these measures accounted for more than 52,916,506 gallons of water saved annually. Based on the City of Albuquerque's previously calculated savings of 3.548 kWh per 1,000 gallons pumped, these measures provide an additional 187,7748 kWh savings in pumping costs. Although NMGC maintains that the reduction in water usage from energy efficient showerheads, faucet aerators, and pre-rinse spray valves does directly affect energy usage by reducing the quantity of water pumped by the water utility or municipality, NMGC does not include these savings in calculating the UCT for its programs. Electric savings for NMGC's programs are not allowed under the UCT but the water savings will continue to be documented as non-energy benefits for future programs.

Energy Efficiency Rule Reporting Requirements

This section of the 2023 Report follows the reporting requirements and section headings as specified in 17.7.2.14(D) NMAC of the EE Rule.

D(1) Independent Measurement and Verification Report

As required by the NMPRC, NMGC contracted with EcoMetric to conduct the independent evaluation of its energy efficiency programs. Their report entitled "PY2023 Evaluation of New Mexico Gas Company Energy Efficiency Programs" is submitted with this report (Appendix C) and includes an analysis of the energy savings realized by all seven programs.

D(2) Program Expenditures Not Included in the M&V Report

The M&V Report for the 2023 Program Year contains an analysis of all seven programs. Therefore, all expenditures were included in the M&V Report. The expenditures for all programs for the 2023 Program Year were $13,034,461. These expenditures include all expenses incurred by NMGC to develop and implement the programs.

D(3) Material Variances in Program Costs

The table below provides comparisons on estimated savings and monetary costs to actual savings and costs for each program for the 2023 Program Year. The information for each program was derived from the final conclusions reached by EcoMetric's evaluation of NMGC's 2023 Program Year and documented in the attached 2023 M&V report (see Appendix C). Avoided costs used to calculate savings can be found in Appendix A of this document.

NEW MEXICO GAS COMPANY, INC.

2023 Energy Efficiency Program Annual Report

Estimated Program Budget and UCT Results

Program	2023 Year Estimated Participation	Estimated Annual Therms Saved*	Estimated Lifetime Therms Saved *	Total Program Budget	UCT	Cost per Therm Saved
Water Heating	16,171	228,464	2,852,630	$1,235,791	1.09	$0.43
Space Heating	2,688	220,800	3,731,994	$1,182,884	1.38	$0.32
New Homes	1,150	400,752	10,018,800	$1,139,662	3.46	$0.11
Income Qualified	1,787	528,208	8,280,092	$4,096,699	1.17	$0.49
Multi-Family**	4,000	372,969	5,594,535	$2,266,700	1.27	$0.41
Efficient Buildings**	269	1,570,777	17,204,937	$4,405,722	1.85	$0.26
Home Enrgy Reports	220,000	1,210,000	1,210,000	$727,745	1.10	$0.60
Portfolio Costs	N/A	N/A	N/A	$238,000	N/A	
Total		4,531,970	48,892,988	$15,293,203	1.55	$0.31

** Adjusted for free ridership as derived from the M&V report and/or the NMTRM*

***Efficient Buildings participation are projects associated with that program and Multi-Family are units associated with that program*

Actual Program Budget and UCT Results

Program	2023 Year Actual Participation	Actual Annual Therms Saved*	Actual Lifetime Therms Saved *	Total Program Costs	UCT	Cost per Therm Saved
Water Heating	24,981	372,169	4,117,985	$1,233,913	1.65	$0.30
Space Heating	12,074	196,475	3,534,499	$1,094,736	1.40	$0.31
ThermSmart New Homes	1,388	352,456	8,106,477	$1,239,494	2.60	$0.15
Income Qualified	599	267,607	4,053,934	$2,497,753	0.90	$0.62
Multi-Family**	1,238	332,353	5,528,747	$2,042,994	1.45	$0.37
Efficient Buildings**	235	1,572,461	18,705,728	$4,086,833	2.25	$0.22
Home Energy Reports	144,000	61,950	61,950	$687,235	0.10	$11.09
Portfolio Costs	N/A	N/A	N/A	$151,502	N/A	N/A
Total		3,155,471	44,109,320	$13,034,461	1.63	$0.30

**Net savings adjusted for free-ridership and derived from M&V Report*

***Efficient Buildings participation are projects associated with that program and Multi-Family are units associated with that program*

The 2023 Program Year costs were approximately $2 Million under the expected budget. This was mainly due to the scale and scope of the program expansion approved in NMPRC Case No. 20-00232-UT. In the 2023 Program Year, NMGC nearly doubled the energy efficiency program, including adding two new programs. It took some time to implement the full magnitude of the changes proposed, including increasing staffing and customer participation. Now that NMGC's proposals have been implemented, NMGC expects costs for the 2024 Program Year to reach the approved budget of $15,293,203.

D(4) Number of Program Participants

Total number of participants for each program for 2023 Program Year is reflected in the table below.

Program Year 2023	Total Number of Participants for Program Year 2023
Water Heating	24,981
Space Heating	12,074
New Homes	1,388
Income Qualified	599
Multi-Family*	1,238
Efficient Buildings*	235
Home Energy Reports	144,000
* Efficient Buildings participation are projects associated with that program and Multi-Family are units associated with that program	

D(5) Economic Benefits

The table below reflects the economic benefits from the 2023 Program Year and are derived from the M&V Report.

Program	Cost per Therm Saved	2023 Economic Benefits*	NPV of Total Economic Benefits*
Water Heating	$0.30	$184,292	$ 2,039,163
Space Heating	$0.31	$85,347	$ 1,535,346
New Homes	$0.15	$140,245	$ 3,225,635
Income Qualified	$0.62	$147,581	$ 2,235,675
Multi-Family	$0.37	$177,970	$ 2,960,565
Efficient Buildings	$0.22	$772,811	$ 9,193,226
Home Energy Reports	$11.09	$68,923	$ 68,923
All Programs	$0.30	$1,577,169	$ 21,258,533

** Economic Benefits and NPV of Total Economic Benefits are derived from the M&V Report.*

D(6) Self-Direct Programs

There were no customer applications for the self-direct program in the 2023 Program Year.

D(7) Other Information of Interest to the Commission

Cost Allocation and Expenses by Program

All energy efficiency expenses are tracked through a unique set of account numbers. The following table shows the allocation of costs to the various programs for the 2023 Program Year.

Program Year 2023	Rebates	Internal Administration	External Administration	Promotion	M&V Expenses	Total Program Costs
Water Heating	$516,820	$41,490	$607,774	$33,436	$34,394	$1,233,913
Space Heating	$471,690	$41,490	$513,727	$33,436	$34,394	$1,094,736
New Homes	$828,566	$41,490	$301,608	$33,436	$34,394	$1,239,494
Income Qualified	$2,129,056	$41,490	$258,831	$33,436	$34,940	$2,497,753
Multi-Family	$1,660,605	$41,490	$273,068	$33,436	$34,394	$2,042,994
Efficient Buildings	$1,447,280	$41,490	$2,530,234	$33,436	$34,394	$4,086,833
Home Energy Reports	N/A	$41,490	$577,915	$33,436	$34,394	$687,235
Portfolio Costs	N/A	$0	N/A	N/A	N/A	$151,502
Total	$7,054,017	$290,428	$5,063,157	$234,054	$241,304	$13,034,461

Internal administration is the labor and administrative costs expended on energy efficiency programs by the Company's Energy Efficiency Department. As of March 31, 2024, NMGC's Energy Efficiency Department consisted of three full-time staff members. EE Staff labor, during the 2023 Program Year, was spent on oversight of the existing energy efficiency programs, vetting programs and measures for potential future filings, preparing and submitting NMPRC compliance reporting, ongoing interface with NMGC's program administrators and M&V activity.

External administration are costs associated with third-party program administration of NMGC's programs. Administering the Water Heating, Space Heating, New Homes and Home Energy Reports programs is ICF. Administering the Income Qualified program is MFA for the Energy$mart program and EnergyWorks for the Native American, Manufactured Home Communities and Community Energy Efficiency programs. Administering the Multi-Family program is ICAST and administering the Efficient Buildings program is CLEAResult. All five third-party program administrators are under contract with NMGC. Third-party administration costs include labor and other direct expenses related to program implementation planning, program marketing and website materials development and management, outreach and marketing of the programs to eligible participants, energy efficiency opportunity identification and assessment, energy engineering and energy savings validation, rebate processing, quality control inspections, and some direct installation of high efficiency showerheads, faucet aerators, pre-rinse spray valves, weatherstripping, and bay door brush seals. Review of rebate applications and qualifying of customers by ICF, MFA, EnergyWorks, ICAST and CLEAResult for their respective programs is also included. To the extent that these contracts require third-parties to conduct promotional activities acceptable to NMGC, those promotional costs are considered third-party administrative costs.

Promotional expenses for the 2023 Program Year were used primarily for raising awareness on all programs through brochures and advertising campaigns and were allocated equally among the energy efficiency programs except those costs specific to individual programs.

M&V expenses for the 2023 Program Year include final invoices received from Evergreen since April 1, 2023, for performing final M&V activities for the 2022 Program Year and their annual independent program evaluation report for the 2022 Program Year, completed June 2023. Also included in the costs are invoices received and paid through March 31, 2023, from EcoMetric for their continued evaluation of NMGC's 2023 Program Year.

Portfolio costs include all costs related to the energy efficiency portfolio but not directly associated to an individual program such as legal, training, research and development, and general education activities.

Compliance with Final Order in NMPRC Case No. 22-00232-UT

As stated in Paragraph 7 in the findings and conclusions of the Recommended Decision "the Commission require[d] NMGC to include in its annual report the success of the plan in its implementation, including any behind the meter leak remediation, and whether the anticipated energy savings are being realized, and if anticipated savings are not realized, proposals for plan revisions that will result in meeting savings goals."

The success of the plan and savings are addressed throughout this report. For meter leak remediation, as part of NMGC's income-qualified energy efficiency programs, EnergyWorks conducts a natural gas safety inspection of each home. This includes testing the ambient air and then leak detection testing from the meter to the home and the gas connections at all appliances. In Program Year 2023, EnergyWorks provided services to 338 customers and identified three gas leaks and notified the New Mexico Gas Company Operations Center who quickly resolved the issues. The three leaks were observed while providing services under the Native American Energy Efficiency Program. EnergyWorks did not identify any leaks in homes that participated in the Mobile Home Communities or Community Energy Efficiency programs.

Non-Energy Benefits

Third-party contractors are utilized to implement NMGC's energy efficiency programs. The continued growth of NMGC's portfolio has contributed to an increase in jobs created to successfully administer the programs. In a survey of its implementers by NMGC, the equivalent of approximately 46 full time employees ("FTE") are required to implement all the programs in its portfolio. The majority of these FTE's reside in New Mexico. Additional implementer resources are utilized periodically for engineering and quality control inspections.

NMGC's programs also have an impact on the environment. The following table shows the CO_2 emission reductions associated with the portfolio of programs. The annual and lifetime avoided emissions are determined by multiplying the emissions rates times the annual and lifetime therms saved by the portfolio of programs.[1] In addition, three of NMGC's energy efficiency measures contribute directly to water savings. The Efficient Buildings program direct-install measures of low flow pre-rinse valves and faucet aerators combined with the Water Heating, Income Qualified, and Multi-Family measures account for more than 52,916,506 gallons of water saved annually. The expected lifetime for those measures is 10 years as determined by New Mexico's TRM.

2023 Program Year			
Emission Impact	Annual Avoided Gas Emissions Rate (lbs/therm)*	Annual Avoided Gas Emissions Rate (Metric tons)	Lifetime Avoided Emissions (Metric tons)
CO_2	116.65	184,043	2,572,676
Water Impact		Annual Water Saved (gallons)	Lifetime Water Saved (gallons)
Water Savings		52,916,506	529,165,060

*The avoided CO_2 emissions rate for gas combustion was taken from U.S. Department of Energy - Energy Information Administration's Annual Energy Outlook 2023.

[1]The avoided CO_2 emissions rate for gas combustion was taken from U.S. Department of Energy - Energy Information Administration's Annual Energy Outlook 2023.

Promotional Activities

Most promotional and marketing activities for NMGC's programs are the responsibility of the third-party implementers to work with builders, contractors, distributers, manufacturers, architects and other trade allies to educate and make them aware of NMGC's programs. Outreach directly to NMGC's customers is a joint effort with shared budgets. For NMGC's 2023 Program, activities included the following:

Mass Media Communications

NMGC began its promotional effort after receiving the Final Order in NMPRC Case No. 22-00232-UT approving the 2023 Program Year. Promotional efforts and program information for the 2023 Program Year began in April 2023 updating rebate applications, promoting the continuation of existing programs and marketing the new programs. A brochure that outlines all the approved programs continued to be distributed throughout the State at NMGC offices. The brochures and promotion of the programs are offered at various events throughout the year including, but not limited to, the Albuquerque Home & Garden Show, the Albuquerque Home & Lifestyle Show, the New Mexico Municipal League Annual Conference and the Albuquerque Home & Remodeling Show. Radio ads informing and promoting NMGC's energy efficiency programs to the public ran throughout the year along with internet banner ads and social media.

Targeted Communications

In conjunction with ICF and CLEAResult, NMGC held meetings throughout the State with contractors, vendors, and suppliers to inform them of the programs and began signing them up as participating contractors in April 2023. Additional contractors were added throughout the 2023 Program Year and all participating contractors were communicated with regarding the 2023 Program Year to solicit continued participation. To participate, contractors are required to have a license and insurance and understand the program criteria. They are then listed on NMGC's website including the areas they serve. In addition, NMGC held meetings and promotions with pueblos, ran social media campaigns, and provided bill messages promoting its programs along with the Home Energy Analyzer that helps homeowners determine the most effective measures to make their home more energy efficient.

NMGC understands the value of promotion and education of its energy efficiency programs and the importance of expanding the outreach. The EE Staff has continued to work with NMGC offices throughout the State to better educate NMGC employees about its energy efficiency programs. The intent is to have more employees understand the background of the energy efficiency programs and be able to transfer that knowledge to customers in their region of the State.

NEW MEXICO GAS COMPANY, INC.

Energy Efficiency Avoided Costs
2023 Program Year

Year	NMGC Projected Avoided Cost (per MMBtu)	Per Therm
2021	$ 6.60	$ 0.66
2022	$ 6.42	$ 0.64
2023	$ 6.08	$ 0.61
2024	$ 5.71	$ 0.57
2025	$ 5.51	$ 0.55
2026	$ 5.48	$ 0.55
2027	$ 5.59	$ 0.56
2028	$ 5.77	$ 0.58
2029	$ 5.92	$ 0.59
2030	$ 6.03	$ 0.60
2031	$ 6.12	$ 0.61
2032	$ 6.14	$ 0.61
2033	$ 6.21	$ 0.62
2034	$ 6.21	$ 0.62
2035	$ 6.19	$ 0.62
2036	$ 6.19	$ 0.62
2037	$ 6.20	$ 0.62
2038	$ 6.21	$ 0.62
2039	$ 6.21	$ 0.62
2040	$ 6.25	$ 0.62
2041	$ 6.25	$ 0.63
2042	$ 6.23	$ 0.62
2043	$ 6.23	$ 0.62
2044	$ 6.19	$ 0.62
2045	$ 6.16	$ 0.62
2046	$ 6.16	$ 0.62
2047	$ 6.15	$ 0.62
2048	$ 6.17	$ 0.62
2049	$ 6.15	$ 0.62
2050	$ 6.15	$ 0.61

NEW MEXICO GAS COMPANY, INC.

Program Reconciliation and Cost Recovery Calculation
2023-2024

Line No.		Over/(Under) Recovered Amounts
1	Reconciliation Amounts at 3/31/2024	$ 1,694,667
2	2023 Plan expenses incurred after 3/31/2024	$ (495,372)
3	Net Over Collection for Program Year 2023	$ 1,199,295
4	Actual Cost recovery 4/1/2024 - 5/31/2024	$ 2,446,253
5	Cost recovery estimate 6/1/2024 - 7/31/2024	$ 1,080,425
6	Program Cost - 2024	$ (16,122,449)
7	Cost recovery estimate 8/1/2024 - 3/31/2025	$ (11,396,476)

Rate 10 - Residential

	June 2024 through July 2024 (Based on 2021 Rate Case)	Therms Distribution	Therms Transmission	Therms Commodity	Bills	Number of Customers	Current Recovery Rate	Rider No. 15 Recovery
8	6/1/2024- 7/31/2024	16,847,007	16,360,273	16,852,990	1,025,704	506,503	$ 0.0304	$ 512,331
9	Total	16,847,007	16,360,273	16,852,990	1,025,704	506,503		512,331

Rate 54 - Small Volume Service

	June 2024 through July 2024 (Based on 2021 Rate Case)	Therms Distribution	Therms Transmission	Therms Commodity	Bills	Number of Customers	Current Recovery Rate	Rider No. 15 Recovery
10	6/1/2024- 7/31/2024	11,936,675	11,601,181	11,976,035	83,040	41,323	$ 0.0304	$ 364,071
11	Total	11,936,675	11,601,181	11,976,035	83,040	41,323		364,071

Rate 56 - Medium Volume Service

	June 2024 through July 2024 (Based on 2021 Rate Case)	Therms Distribution	Therms Transmission	Therms Commodity	Bills	Number of Customers	Current Recovery Rate	Rider No. 15 Recovery
12	6/1/2024- 7/31/2024	5,593,226	6,448,737	6,711,266	219	111	$ 0.0304	$ 204,022
13	Total	5,593,226	6,588,318	6,946,954	219	111		$ 204,022
14	Total Rates 10, 54 & 56	34,376,908	34,549,771	35,775,980	1,108,963	547,936		$ 1,080,425

-

Rate 10 - Residential

	August 2024 through March 2025 (Based on 2021 Rate Case)	Therms Distribution	Therms Transmission	Therms Commodity	Bills	Number of Customers	Proposed Recovery Rate	Rider No. 15 Recovery
15	8/1/2024 - 3/31/2025	275,287,081	266,863,452	275,377,118	4,115,632	508,960	$ 0.0257	$ 7,089,806
16	Total	275,287,081	266,863,452	275,377,118	4,115,632	508,960		$ 7,089,806

Rate 54 - Small Volume Service

	August 2024 through March 2025 (Based on 2021 Rate Case)	Therms Distribution	Therms Transmission	Therms Commodity	Bills	Number of Customers	Proposed Recovery Rate	Rider No. 15 Recovery
17	8/1/2024 - 3/31/2025	127,400,985	123,841,585	127,961,110	334,380	41,561	$ 0.0257	$ 3,294,462
18	Total	127,400,985	123,841,585	127,961,110	334,380	41,561		$ 3,294,462

Rate 56 - Medium Volume Service

	August 2024 through March 2025 (Based on 2021 Rate Case)	Therms Distribution	Therms Transmission	Therms Commodity	Bills	Number of Customers	Proposed Recovery Rate	Rider No. 15 Recovery
19	8/1/2024 - 3/31/2025	32,574,427	37,091,110	39,315,495	894	111	$ 0.0257	$ 1,012,209
20	Total	32,574,427	37,091,110	39,315,495	894	111		$ 1,012,209
21	Total Rates 10, 54 & 56	435,262,493	427,796,147	442,653,723	4,450,907	550,632		$ 11,396,476

NEW MEXICO GAS COMPANY, INC.

Program Cost Rider Calculation

Line No.		8/1/24 - 3/31/25			
	Program Budget Costs				
1	Internal Administration	$ 1,017,500			
2	External Administration	$ 5,377,412			
3	Rebates	$ 8,214,291			
4	Promotional Costs	$ 195,000			
5	Measurement & Verification Costs	$ 251,000			
6	Portfolio Costs	$ 238,000			
7	**TOTAL for EE Plan Budget**	**$ 15,293,203**			
8	Incentive Rate	$ 1,016,998			
9	Incentive Reconciliation - Under-Recovered 2023 Program Year	$ 21,544			
10	Actual Incentive recovery 4/1/2024 - 5/31/2024	$ (144,899)			
11	Incentive recovery estimate 6/1/2024 - 7/31/2024	$ (64,397)			
12	**Total Cost to be Recovered**	**$ 16,122,449**			
13	Cost recovery 8/1/2024 - 3/31/2025 (See SLC-2, page 1, Line 7)	$ (11,396,476)			
	Revenues by Rate Class - Projected for 8/1/2024 through 3/31/2025				
	Based on Rate Case Rates & Determinants	Revenues	Bills	Therms	
14	Residential (Rates 10 and 70)	$ 199,532,149	4,115,632	275,377,118	
15	Small Volume (Rates 54 and 70)	$ 66,172,009	334,380	127,961,110	
16	Medium Volume (Rates 56 and 70)	$ 15,750,916	894	39,315,495	
17	**Totals**	$ 281,455,074	4,450,907	442,653,723	
	Program Cost Rider				
18	Program Costs to be Recovered	$ (11,396,476)			
19	Revenues 8/1/23 - 3/31/24	$ 281,455,074			
20	Percentage of Revenues	-4.049%			
21	Rider 15 as a Charge per Therm	$ (0.0257)			
	Proof of Revenue				
22	Charge per Therm	$ (0.0257)			
23	Therms	442,653,723			
24	Rider 15 Revenue Generated	$ (11,396,476)			
	Cost per therm saved				
25	Therms Saved Over the Life of the Measures		48,892,998		
26	Cost of the Programs		$ 15,293,203		
27	Cost per therm Saved		$ 0.3128		
28	Cost of Gas Purchases Avoided (before Franchise Fees & Gross Receipts Tax)		$ 0.5250		
29	Savings per therm		$ 0.2122		
30	Total Avoided Cost of Gas Purchases		$ 25,668,824		
31	Net Savings to Customers from Energy Efficiency Programs		$ 10,375,621		

PY2023 EVALUATION OF NEW MEXICO GAS COMPANY ENERGY EFFICIENCY PROGRAMS

FINAL REPORT

Date: June 21, 2024

Prepared for: New Mexico Gas Company

Prepared by: EcoMetric Consulting LLC

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TABLES

Executive Summary

This report presents the independent evaluation results for the New Mexico Gas Company (NMGC) energy efficiency programs for program year 2023 (PY2023).

The NMGC programs and evaluation requirements were first established in 2005 by the New Mexico legislature's passage of the 2005 Efficient Use of Energy Act (EUEA).[1] The EUEA requires public utilities in New Mexico, in collaboration with other parties, to develop cost-effective programs that reduce energy demand and consumption. Utilities are required to submit their proposed portfolio of programs to the New Mexico Public Regulation Commission (NMPRC) for approval. As a part of its approval process, the NMPRC must find that the program portfolio is cost effective based on the Utility Cost Test (UCT).

An additional requirement of the EUEA is that each program must be evaluated at least once every three years. As part of the evaluation requirement, NMGC must submit to the NMPRC a comprehensive evaluation report prepared by an independent program evaluator. As part of the reporting process, the evaluator must measure and verify energy and demand savings, determine program cost effectiveness, assess how well the programs are being implemented, and provide recommendations for program improvements as needed. The EcoMetric evaluation team consisted of the following firms:

- EcoMetric was the prime contractor and managed all evaluation tasks and deliverables
- EcoMetric provided engineering capabilities and led the review of NMGC's savings estimates
- Evergreen Economics provided process evaluation capabilities
- Evergreen Economics fielded all the phone surveys
- Demand Side Analytics evaluated the Home Energy Reports (HER) program and calculated the cost effectiveness of each program and the portfolio

For PY2023, the following NMGC programs were evaluated:

1 NMSA §§ 62-17-1 et seq (SB 644). Per the New Mexico Public Regulation Commission Rule Pursuant to the requirements of the EUEA, the NMPRC issued its most recent Energy Efficiency Rule (17.7.2 NMAC) effective September 26, 2017, that sets forth the NMPRC's policy and requirements for energy efficiency and load management programs.

- Efficient Buildings
- Income Qualified
- Water Heating
- New Homes
- Home Energy Reports

For each of the evaluated programs, the evaluation team estimated realized gross and net therms impacts and calculated program cost effectiveness using the UCT. Brief process evaluations were also conducted for the Efficient Buildings, Water Heating, New Homes, and Income Qualified programs.

A summary of the analysis methods for each of the PY2023 programs that were evaluated is included below.

Efficient Buildings A large number of projects in the Efficient Buildings program are prescriptive in nature and as such, a significant portion of the evaluation of this program was centered on a deemed savings review, phone survey verification, and project desk reviews. The custom projects with more complicated savings calculations were evaluated using a desk review and participant phone survey. The deemed savings review for prescriptive and direct install measures focused on verifying that the appropriate savings values were applied based on the equipment installed and per the referenced source of savings, whether that was the New Mexico Technical Reference Manual (TRM) or another source. The phone survey was used to verify that program-rebated measures are still installed and functional as well as gather information to calculate a free ridership rate. Finally, desk reviews conducted by engineers examined the savings assumptions and calculations specific to each project that was selected for review.

Income Qualified The Income Qualified program provides weatherization and other efficiency improvements at no cost to low-income customers. These are a combination of prescriptive and custom measures, and as such, the focus of the evaluation for this program was a deemed and custom savings review. For the PY2023, the evaluation team focused our research on completing additional process evaluations for the components of this program. The evaluation team will continue this process research in PY2024 in addition to an impact evaluation of the program

Water Heating Projects in the Water Heating program focus on the therm savings achieved due to installation of high efficiency residential water heaters of various types. The savings were calculated as per the methodology, and parameters proposed in the New Mexico Technical Reference Manual. The evaluation team verified key parameters such as number of bedrooms, water heater tank

capacity, and AHRI documents to recreate savings for the projects sampled. The evaluation team recruited distributors from the list provided by the implementation team to ask critical process evaluation questions.

Home Energy Report The Home Energy Report (HER) program delivers neighbor comparisons and behavioral recommendations on a regular cadence to approximately 140,000 New Mexico households. The HER messaging includes tips on how to reduce energy consumption. Net impacts for the program were estimated using billing regression and data from both the participants and control group customers.

New Homes The New Homes program offers incentives to builders that take a whole home approach to efficiency upgrades. This program is coordinated with the other residential new construction programs offered by New Mexico's electric utilities. Gross savings for this program were estimated based on engineering desk reviews for a statistically representative sample of projects plus a review of the deemed savings for more prescriptive measures. Interviews with builders statewide were used for the process evaluation and to estimate a net-to-gross ratio for calculating net impacts.

Table 1 and Table 2 summarize the PY2023 evaluation tasks the evaluation team completed for each program.

Table 1: Summary of PY2023 Evaluation

Program	Impact	Process	NTG
Efficient Buildings	✓	✓	✓
Water Heating	✓	✓	✓
New Homes	✓	✓	✓
Income Qualified		✓	
Home Energy Reports	✓		

Table 2: Summary of PY2023 Evaluation Methods by Program

Program	Deemed Savings Review	Phone Interview	Engineering Desk Review	Onsite	Energy Modeling	Billing Regression
Water Heating	✓	✓	✓			
New Homes		✓	✓		✓	
Efficient Buildings	✓	✓	✓	✓		✓
Income Qualified		✓				
Home Energy Reports						✓

The results of the PY2023 impact evaluation are shown in Table 3 (Therms) with the programs evaluated in 2023 highlighted in gold.

Table 3: PY2023 Savings Summary – Therms

Program	# of Projects	Expected Gross Therms Savings	Engineering Adjustment Factor	Realized Gross Therms Savings	NTG Ratio	Realized Net Therms Savings
ENERGY STAR Water Heating	24,981	405,825	1.0000	405,825	0.9171	372,169
ENERGY STAR Space Heating	12,074	267,895	1.0000	267,895	0.7334	196,475
New Homes	1,388	480,643	1.0000	480,643	0.7333	352,456
Income Qualified	599	267,607	1.0000	267,607	1.0000	267,607
Multifamily	1,238	333,625	0.9980	332,958	0.9982	332,353
Efficient Buildings	234	1,723,694	0.9927	1,711,057	0.9190	1,572,461
Home Energy Reports	144,000	61,950	1.0000	61,950	1.0000	61,950
Total	**184,514**	**3,541,239**	**0.9962**	**3,527,935**		**3,155,470**

*Savings values may not be reproducible as shown, due to rounding

Lifetime Therms savings are shown in Table 4 by program and for the portfolio overall. This includes expected gross, realized gross, and realized net lifetime savings.

Table 4: Lifetime Savings Summary – Therms

Program	Expected Gross Lifetime Therms Savings	Realized Gross Lifetime Therms Savings	Realized Net Lifetime Therms Savings
ENERGY STAR Water Heating	4,665,804	4,665,804	4,117,985
ENERGY STAR Space Heating	4,825,465	4,825,465	3,534,499
New Homes	11,054,789	11,054,789	8,106,477
Income Qualified	4,053,934	4,053,934	4,053,934
Multifamily	5,550,739	5,539,638	5,528,747
Efficient Buildings	20,504,770	20,354,437	18,705,728
Home Energy Reports	61,950	61,950	61,950
Total	**50,717,451**	**50,556,017**	**44,109,320**

*Savings values may not be reproducible as shown due to rounding

Beginning in 2021, the impact evaluation moved to applying new net-to-gross (NTG) ratios prospectively in future years, rather than retrospectively as had been done in prior years. The PY2022 NTG ratios are being applied to the PY2023 results. The NTG ratios calculated in PY2023 will then be applied to the PY2024 results.

Table 5 summarizes the updates to the NTG ratios for PY2024.

Table 5: Net-to-Gross Ratio Updates for PY2024

Program	PY2023 NTG Ratio	PY2024 NTG Ratio
Efficient Buildings	0.9190	0.8326
Income Qualified	1.0000	1.0000
Multifamily Low Income	1.0000	1.0000
Multifamily Market Rate	0.8083	0.8083
New Homes	0.7333	0.6917
ENERGY STAR Water Heating	0.5854	0.5854
ENERGY STAR Space Heating - Furnace	0.7313	0.7313
ENERGY STAR Space Heating – Insulation	0.7313	0.7313
ENERGY STAR Space Heating – Smart Thermostat	0.7700	0.7700

Using net realized savings from this evaluation and cost information provided by NMGC, the evaluation team calculated the ratio of benefits to costs for each of NMGC's programs and for the portfolio overall. The evaluation team calculated cost effectiveness using the UCT, which compares the benefits and costs to the utility or program administrator implementing the program.[2] The evaluation team conducted this test in a manner consistent with the California Energy Efficiency Policy Manual.[3] The results of the UCT are shown below in Table 6. The portfolio overall was found to be cost effective with a UCT ratio of 1.63.

2 The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.
3 California Public Utilities Commission. 2020. California Energy Efficiency Policy Manual – Version 6. https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/e/6442465683-eepolicymanualrevised-march-20-2020-b.pdf

Table 6: PY2023 Cost Effectiveness

Program	Utility Cost Test (UCT)
Income Qualified	0.90
Efficient Buildings	2.25
Multifamily	1.45
New Homes	2.60
ENERGY STAR Water Heating	1.65
ENERGY STAR Space Heating	1.40
Home Energy Reports	0.10
Overall Portfolio	**1.63**

Based on the data collection and analysis conducted for this evaluation, the evaluation team found that overall, NMGC is operating high quality programs that are achieving significant energy savings and producing satisfied participants.

The impact evaluation included engineering desk reviews for a sample of Efficient Buildings and Water Heating projects. The evaluation team adjusted savings based on desk reviews for the sampled projects.

Adjustments to savings based on the desk reviews were due to an applying appropriate savings methodologies presented in the NMGC workpapers and the New Mexico Technical Reference Manual for gas fryer and domestic hot water projects. The evaluation team made one adjustment to a custom chiller upgrade project to isolate the reduction in gas savings that result from the complete of the project. The evaluation team is working with the implementation team to improve reported savings captured by the program in PY2024.

1 EVALUATION METHODS

This section describes the evaluation methods used to evaluate New Mexico Gas Company's (NMGC) 2023 energy efficiency programs.

1.1 PHONE SURVEYS

Phone surveys were fielded in February through May 2024 for participants in the Water Heating, New Homes, Efficient Buildings, and the Income Qualified Weatherization Assistance Program (WAP). The phone surveys ranged from 15 to 20 minutes in length and covered the following topics:

- Verification of measures included in NMGC's program tracking database
- Satisfaction with the program experience
- Survey responses for use in the free ridership calculations (excluded from Income Qualified survey)
- Participation drivers and barriers
- Customer characteristics

Table 7 provides the number of customers with valid contact information, the target number of completes, and the actual number of completes for each program. The term “customers” is used broadly and in some cases included builders, distributors, housing authority contacts, and others. Outreach efforts are ongoing for the Native American Communities Program, Community Grants program, and MHCP, and the values for those programs will be updated in the final report.

Table 7: NMGC Phone Survey Summary

Program	Customers with Valid Contact Info	Target # of Participants	Completed Surveys
Water Heating	17	5	1
New Homes	26	5	5
Efficient Buildings	79	40	36
Income Qualified NAC	4	4	0*
Income Qualified Community Grants	0*	5	0*
Income Qualified MHCP	0*	5	0*
Income Qualified WAP	28	12	12
Total	**154**	**76**	**54**

*Contact information not yet provided and/or outreach ongoing

The final survey instruments for the Water and Space Heating, New Homes, Efficient Buildings, and Income Qualified programs (Native American Communities Program and Weatherization Assistance Program) are included in Attachment A, Attachment B, Attachment C and Attachment D.

1.2 ENGINEERING DESK REVIEWS AND DEEMED SAVINGS REVIEWS

To verify gross savings estimates, the evaluation team conducted engineering desk reviews for a sample of the projects in the Efficient Buildings, Water Heating, and New Homes programs. The goal of the desk reviews was to verify equipment installation, operational parameters, and estimated savings.

For PY2023, both prescriptive and custom projects received desk reviews that included the following:

- Review of project description, documentation, specifications, and tracking system data
- Confirmation of installation using invoices and post-installation reports
- Review of post-installation reports detailing differences between installed equipment and documentation, and subsequent adjustments made by the program implementer

For those programs and projects that used deemed savings values, the review process included the following:

- Review of measures available in the New Mexico TRM and utility workpapers to determine the most appropriate algorithms that apply to the installed measures
- Recreation of savings calculations using TRM algorithms and inputs as documented by submitted specifications, invoices, and post-installation inspection reports
- Review of New Mexico TRM algorithms to identify candidates for future updates and improvements

For the custom projects included in the Efficient Buildings program, the engineering desk reviews included the following:

- Review of engineering analyses for technical soundness, proper baselines, and appropriate approaches for the specific applications
- Review of input data for appropriate baseline specifications and variables such as weather data, bin hours, and total annual hours to determine if they are consistent with facility operation
- Consideration for and review of interactive effects between affected systems

1.3 ONSITE INSPECTIONS

In support of the engineering desk reviews, the evaluation team completed five onsite inspections for the Efficient Buildings program. The evaluation team contacted selected participants by phone and email to schedule the onsite inspections. The evaluation team visited sites to verify equipment installation and operational parameters.

1.4 NET IMPACT ANALYSIS (SELF REPORT APPROACH)

The evaluation team estimated net impacts for most programs using the self-report approach. This method uses responses to a series of carefully constructed survey questions to learn what participants would have done in the absence of the utility's program. The goal is to ask enough questions to paint an adequate picture of the influence of the program activities (rebates and other program assistance) within the confines of what can reasonably be asked during a phone survey.

With the self-report approach, specific questions that are explored include the following:

- What were the circumstances under which the customer decided to implement the project (i.e., new construction, retrofit/early replacement, replace-on-burnout)?
- To what extent did the program accelerate installation of high efficiency measures?
- What were the primary influences on the customer's decision to purchase and install the high efficiency equipment?
- How important was the program rebate on the decision to choose high efficiency equipment?
- How would the project have changed if the rebate had not been available (e.g., would less efficient equipment have been installed, would the project have been delayed)?
- Were there other program or utility interactions that affected the decision to choose high efficiency equipment (e.g., was an energy audit done, has the customer participated before, is there an established relationship with a utility account representative, was the installation contractor trained by the program)?

The method used for estimating free ridership (and ultimately the NTG ratio) using the self-report approach is based on the 2017 Illinois Statewide TRM.[4] For the NMGC programs, questions regarding free ridership were divided into several primary components:

- A ***Program Component*** series of questions that asked about the influence of specific program activities (rebate, customer account rep, contractor recommendations, other assistance offered) on the decision to install energy efficient equipment
- A ***Program Influence*** question, where the respondent was asked directly to provide a rating of how influential the overall program was on their decision to install high efficiency equipment
- A ***No-Program Component*** series of questions, based on the participant's intention to carry out the energy-efficient project without program funds or due to influences outside of the program

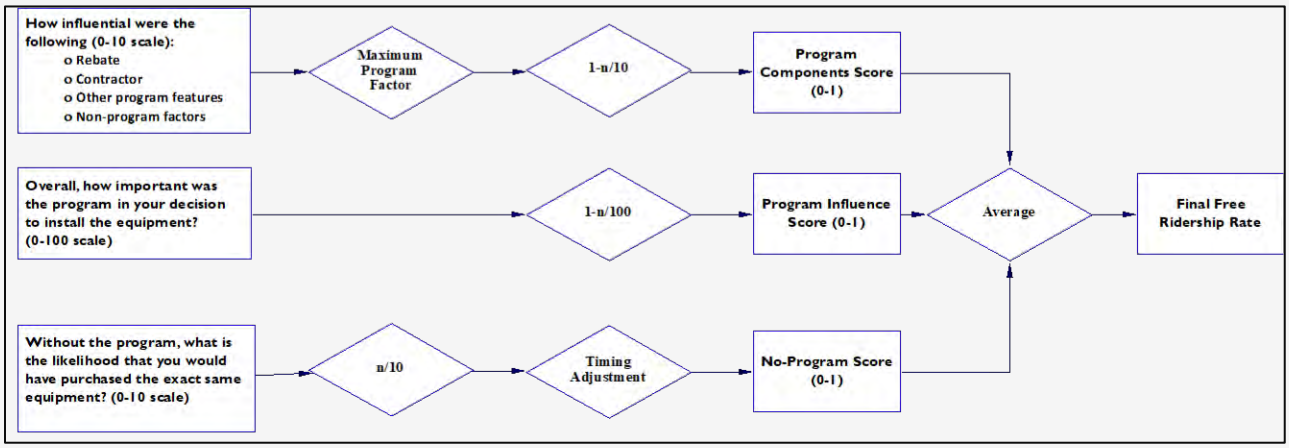
Each component was assessed using survey responses that rated the influence of various factors on the respondent's equipment choice. Since opposing biases potentially affect the main components, the No-Program Component typically indicates higher free ridership than the Program Component/Influence questions. Therefore, combining these opposing influences helps mitigate the

4 The full Illinois TRM can be found at http://www.ilsag.info/il_trm_version_6.html.

potential biases. This framework also relies on multiple questions that are crosschecked with other questions for consistency. This prevents any single survey question from having an excessive influence on the overall free ridership score.

Figure 1 provides a simplified version of the scoring algorithm. In some cases, multiple questions were asked to assess the levels of efficiency and purchase timing in absence of the program. For each of the scoring components, the question responses were scored so that they were consistent and resulted in values between 0 and 1. Once this was accomplished, the three question components were averaged to obtain the final free ridership score.

Figure 1: Self-Report Free Ridership Scoring Algorithm[5]



More detail on each of the three question tracks is provided below.

1.4.1 PROGRAM COMPONENT QUESTIONS

The ***Program Component*** battery of questions was designed to capture the influence of the program on the equipment choice. These questions were also designed to be as comprehensive as possible so that all possible channels through which the program is attempting to reach the customer were included.

The type of questions in the Program Component question battery included the following:

- How influential were the following on your decision to purchase your energy efficient equipment?

5 Adapted by Evergreen Economics from the 2017 Illinois TRM.

- Rebate amount
- Contractor recommendation
- Utility advertising/promotions
- Technical assistance from the utility (e.g., energy audit)
- Recommendation from utility customer representative (or program implementer)
- Previous participation in a utility efficiency program

As shown at the top of Figure 1, the question with the highest value response (i.e., the program factor that had the greatest influence on the decision to install a high efficiency measure) was the one that was used in the scoring algorithm as the Program Component score.

1.4.2 PROGRAM INFLUENCE QUESTION

A separate ***Program Influence*** question asked the respondent directly to rate the combined influence of the various program activities on their decision to install energy efficient equipment. This question allowed the respondent to consider the program as a whole and incorporated other forms of assistance (if applicable) in addition to the rebate. Respondents were also asked about potential non-program factors (condition of existing equipment, corporate policies, maintenance schedule, etc.) to put the program in context with other potential influences.

The Program Influence question also provided a consistency check so that the stated importance of various program factors could be compared across questions. If there appeared to be inconsistent answers across questions (rebate was listed as very important in response to one question but not important in response to a different question, for example), then the interviewer asked follow-up questions to confirm responses. The verbatim responses were recorded and were reviewed by the evaluation team as an additional check on the free ridership results.

1.4.3 NO-PROGRAM COMPONENT QUESTIONS

A separate battery of ***No-Program Component*** questions was designed to understand what the customer might have done if the NMGC rebate program had not been available. With these questions, we attempted to measure how much of the decision to purchase the energy efficient equipment was due to factors that were unrelated to the rebate program or other forms of assistance offered by NMGC.

The types of questions asked for the No-Program Component included the following:

If the program had not existed, would you have:

- Purchased the exact same equipment?
- Chosen the same energy efficiency level?
- Delayed your equipment purchase?
- Did you become aware of the utility rebate program before or after you chose your energy efficient equipment?

The question regarding the timing of awareness of the rebate was used in conjunction with the importance rating the respondent provided in response to the earlier questions. If the respondent had already selected the high efficiency equipment prior to learning about the rebate **and** said that the rebate was the most important factor, then a downward adjustment was made on the influence of the rebate in calculating the Program Component score.

The responses from the No-Program Component questions were analyzed and combined with a timing adjustment to calculate the No-Program score, as shown in Figure 1. The timing adjustment was made based on whether or not the respondent would have delayed their equipment purchase if the rebate had not been available. If the purchase would have been delayed by one year or more, then the No-Program score was set to zero, thereby minimizing the level of free ridership for this algorithm component only.

1.4.4 FREE RIDERSHIP AND NTG CALCULATION

The values from the Program Component score, the Program Influence score, and the No-Program score were averaged in the final free ridership calculation; the averaging helped reduce potential biases from any particular set of responses. The fact that each component relied on multiple questions (instead of a single question) also reduced the risk of response bias. As discussed above, additional survey questions were asked about the relative importance of the program and non-program factors. These responses were used as a consistency check, which further minimized potential bias.

Once the self-report algorithm was used to calculate free ridership, the total NTG ratio was calculated using the following formula:

$$Net\text{-}to\text{-}Gross\ Ratio = (1 - Free\ Ridership\ Rate)$$

Since 2021, updates to program NTG ratios have been applied prospectively. As a result, the NTG ratios for Efficient Buildings, Water Heating, and Residential Lighting developed in the PY2022 evaluation are being applied to the PY2023 results. The NTG ratios calculated using the PY2023 data will then be applied to the PY2024 results. As mentioned in the executive summary, calculations are ongoing for the Efficient Buildings, New Homes, and Space and Water Heating programs, and NTG values to apply to PY2024 results will be provided in the final report.

1.4.5 GROSS AND NET REALIZED SAVINGS CALCULATIONS

The final step in the impact evaluation process is to calculate the realized gross and net savings, based on the program-level analysis described above. The **Gross Realized Savings** are calculated by taking the original *ex ante* savings values from the participant tracking databases and adjusting them using an **Installation Adjustment** factor (based on the count of installed measures verified through the phone surveys) and an **Engineering Adjustment** factor (based on the engineering analysis, desk reviews, etc.):

$$\text{Gross Realized Savings} = (\textit{Ex Ante}\ \text{Savings})*(\text{Installation Adjustment})*(\text{Engineering Adjustment Factor})$$

Net Realized Savings are then determined by multiplying the **Gross Realized Savings** by the net- to-gross ratio:

$$\text{Net Realized Savings} = (\text{Net-to-Gross Ratio})*(\text{Gross Realized Savings})$$

1.5 COST EFFECTIVENESS

The New Mexico Efficient Use of Energy Act (EUEA) requires that utilities include in their publicly available annual reports "the most recent measurement and verification report of the independent program evaluator, which includes documentation, at both the portfolio and individual program levels of expenditures, savings, and cost-effectiveness of all energy efficiency measures and programs and load management measures and programs, expenditures, savings, and cost-effectiveness of all self-direct programs, and all assumptions used by the evaluator." [6] The Utility Cost Test (UCT) is the method used for cost-effectiveness testing. In the UCT, the benefits of a program are the present value of the net energy savings, and the costs are the present value of the program's administrative costs plus incentives paid to customers.

6 https://www.srca.nm.gov/parts/title17/17.007.0002.html, Section 17.7.2.14 - D1

In preparation for the cost-effectiveness analysis, EcoMetric requested key assumptions and inputs from NMGC, including:

- **Avoided cost of energy** – time differentiated production costs per Therms over a 20+ year time horizon.
- **Avoided cost of capacity** – estimated cost of adding a Therms/year of generation, transmission, and distribution to the system. Used to monetize peak demand impacts.
- **Discount rate** – used to calculate the net present value of future savings.
- **Line loss factors** – used to adjust avoided cost for line losses.
- **Administrative costs** – all non-incentive expenditures associated with program delivery.

The verified savings values will be gathered as part of the primary impact evaluation analysis effort and used to calculate benefits for each program. We will compile incentive payments from program tracking data for use in calculating UCT costs.

Section 17.7.2.9.B(4) of the New Mexico Administrative Code allows utilities to claim utility system economic benefits for low-income programs equal to 20 percent of the calculated energy benefits.[7] We applied the 20 percent adder to the benefits calculated for the Income Qualified programs.

7 Available at https://www.srca.nm.gov/parts/title17/17.007.0002.html.

2 IMPACT EVALUATION RESULTS

The results of the PY2023 impact evaluation are shown in Table 8 (therms), with the programs evaluated in 2023 highlighted in gold. As noted previously, each program is required to be evaluated a minimum of once every three years. For PY2023, the evaluated programs covered 77 percent of the total ex ante therm savings.

Table 8: PY2023 Savings Summary – Therms

Program	# of Projects	Expected Gross Therms Savings	Engineering Adjustment Factor	Realized Gross Therms Savings	NTG Ratio	Realized Net Therms Savings
ENERGY STAR Water Heating	24,981	405,825	1.0000	405,825	0.9171	372,169
ENERGY STAR Space Heating	12,074	267,895	1.0000	267,895	0.7334	196,475
New Homes	1,388	480,643	1.0000	480,643	0.7333	352,456
Income Qualified	599	267,607	1.0000	267,607	1.0000	267,607
Multifamily	1,238	333,625	0.9980	332,958	0.9982	332,353
Efficient Buildings	235	1,723,694	0.9927	1,711,057	0.9190	1,572,461
Home Energy Reports	144,000	61,950	1.0000	61,950	1.0000	61,950
Total	**184,515**	**3,541,239**	**0.9962**	**3,527,935**		**3,155,470**

*Savings values may not be reproducible as shown due to rounding

Lifetime therm savings are shown in Table 9 by program and for the portfolio overall. This includes expected gross, realized gross, and realized net lifetime savings.

*Table 9: Lifetime Savings Summary – Therms**

Program	Expected Gross Lifetime Therms Savings	Realized Gross Lifetime Therms Savings	Realized Net Lifetime Therms Savings
ENERGY STAR Water Heating	4,665,804	4,665,804	4,117,985
ENERGY STAR Space Heating	4,825,465	4,825,465	3,534,499
New Homes	11,054,789	11,054,789	8,106,477
Income Qualified	4,053,934	4,053,934	4,053,934
Multifamily	5,550,739	5,539,638	5,528,747
Efficient Buildings	20,504,770	20,354,437	18,705,728
Home Energy Reports	61,950	61,950	61,950
Total	**50,717,451**	**50,566,017**	**44,109,320**

*Savings values may not be reproducible as shown due to rounding

Details on the individual program impacts are summarized below, with additional details on the analysis methods and results for some programs included as Attachments where noted.

3 EFFICIENT BUILDINGS PROGRAM

3.1 EFFICIENT BUILDINGS GROSS IMPACTS

The ex ante PY2023 impacts for the Efficient Buildings program are summarized in Table 10. In total, the Efficient Buildings program accounted for 49 percent of the ex ante energy impacts in NMGC's overall portfolio.

Table 10: PY2023 Efficient Buildings Ex Ante Savings Summary

Measure Category	#of Projects	Expected Gross Therms Savings
Custom	25	506,529
Prescriptive	19	81,331
Direct Install	173	938,913
Steam Trap Audit	17	196,922
Total	**234**	**1,723,694**

The majority of the gross impact evaluation activities were devoted to engineering desk reviews of a sample of projects. For the desk reviews, the sample frame included projects across the prescriptive, custom, steam trap audits and direct install categories. The sample was stratified to cover a range of different measure types so that no single measure would dominate the desk reviews. The sample was also stratified based on total energy savings within each measure group. Overall, the sampling strategy ensured that a mix of projects in terms of both project size and measure type would be included in the desk reviews.

The final sample design is shown in Table 11. The resulting sample achieved a relative precision of 90/1.7 overall.

Table 11: Efficient Buildings Desk Review Sample

Measure Group	Count	Average Therms	Total Therms	% of Savings	Final Sample
Custom	25	20,261	506,529	29.39	7
Prescriptive	19	4,281	81,331	4.72	5
Direct Install	173	5,427	938,913	54.47	12
Steam Trap Audit	17	11,584	196,922	11.42	5
Total	**234**		**1,723,694**	**100**	**29**

As discussed in the Evaluation Methods section, the evaluation team determined gross realized impacts by performing engineering desk reviews on the sample of projects.

For prescriptive projects in the Efficient Buildings program, some of the measure savings were calculated using algorithms and assumptions contained in the New Mexico TRM. For projects where these types of measures were installed, the evaluation team reviewed project-specific inputs and project documentation to confirm that the proper TRM algorithms and associated input values were used.

The ex ante savings for the prescriptive, direct install weatherstripping, and commercial cooking equipment measures were calculated using algorithms and assumptions documented in the utility workpapers prepared by the program implementer. The evaluation team reviewed the general assumptions and methodologies contained in the workpapers for accuracy and appropriateness. For projects where these measures were installed, the evaluation team reviewed project-specific inputs and project documentation to confirm that the proper input values were used.

The evaluation team also reviewed steam trap audit projects in the sample. The team thoroughly reviewed steam trap audit reports to verify steam trap parameters and boiler combustion tests to determine system efficiencies. The methodology and engineering assumptions used to calculate steam loss from a failed-open trap were reviewed by the team. Furthermore, a site visit was conducted to verify steam trap installation and boiler operating parameters.

The ex ante savings for the custom projects were calculated savings using a variety of spreadsheet-based methods. The evaluation team reviewed the spreadsheet-based analyses to ensure accuracy of the calculation methodology, including verification that proper inputs were used based on submitted supporting documentation. When applicable, approaches and assumptions used in custom analyses were compared to those contained in the New Mexico TRM.

Table 12 shows the result of the desk reviews and how the resulting engineering adjustment factor was used to calculate realized savings. For the Efficient Buildings program overall, these adjustments resulted in an engineering adjustment factor of 0.9927.

Table 12: PY2023 Efficient Buildings Gross Impact Summary

Program	#of Projects	Expected Gross Savings	Engineering Adjustment Factor	Realized Gross Savings
Efficient Buildings	234	1,723,694	0.9927	1,711,057

Engineering adjustment factors that varied from 1.0 for individual projects for reasons listed below:

- The evaluation team sampled 3 appliance gas fryer projects under the prescriptive subprogram. The evaluation team calculated savings for the projects using NMGC work papers and was unable to recreate the ex ante savings. The projects received an engineering adjustment factor of 0.45 approximately. The implementation team was made aware of this finding and is working with the evaluation team to improve their methodology to accurately capture savings.
- The evaluation team reviewed a faucet aerator project using methodology and parameters proposed in the New Mexico TRM. The team was unable to recreate the claimed ex ante savings listed in the direct install project summary.
- The evaluation team could not locate the source for the claimed savings value listed in the program data for a steam trap project. The evaluation team verified the parameters and methodologies used in the ex ante calculator and assigned the calculated savings value to the project. The evaluation team worked with the implementation team and concluded that the tracked savings were a reporting error.
- The evaluation team adjusted the savings for a chiller replacement project where the implementer had added an electric penalty to account for the incentive the customer received from the electrical utility to install an above-code chiller and avoid an overlap in savings. The evaluation team removed the electric penalty because the natural gas UCT does not require counting the electric penalty for New Mexico. This increased the ex post savings for the project
- The evaluation team adjusted the savings for two domestic water heater measures in the sample. The implementation team had chosen the incorrect hot water heater category for the installed equipment. The implementation team was made aware of this error and is working with the evaluation team to capture accurate savings going forward.

3.2 PROCESS EVALUATION

The evaluation team randomly selected and recruited participants from the population of Efficient Buildings program participants that had valid contact information. The evaluation team was provided with contact information for 79 customers and completed 36 phone interviews.

3.2.1 PARTICIPANT SURVEYS

Twenty-nine direct install participants and seven non-direct install participants completed interviews. These surveys were completed in May 2024 and ranged from 15 to 20 minutes in length.

The participant survey was designed to cover the following topics:

- Verification of the measure installations included in the program tracking database
- Collection of information on participants' satisfaction with the program experience
- Survey responses for use in the free ridership calculations
- Baseline data on energy use and/or equipment holdings
- Participant drivers and barriers
- Additional process evaluation topics

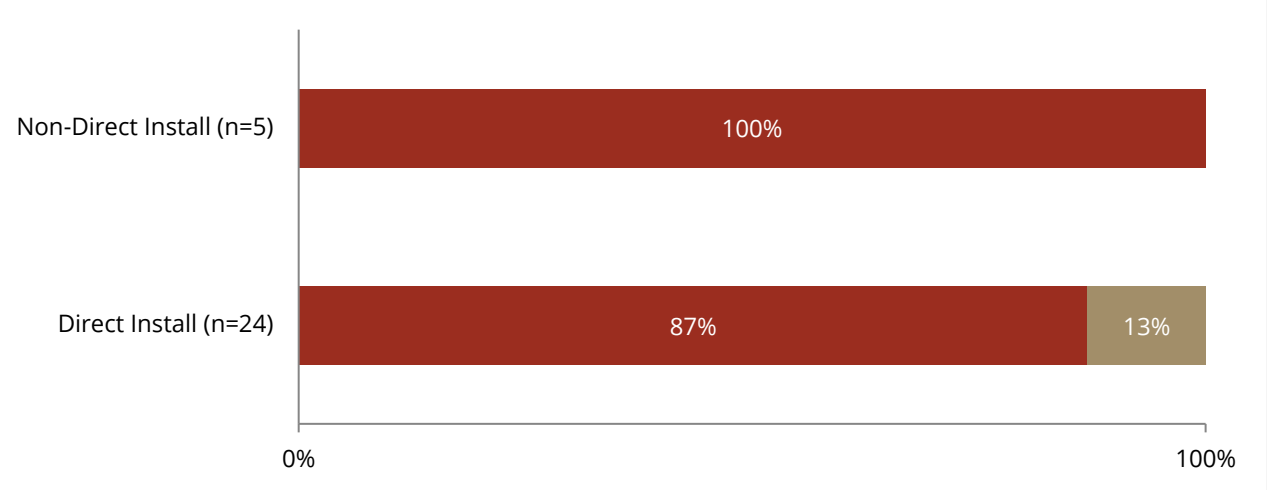
NMGC provided program data on the Efficient Buildings participant projects, which allowed us to select a sample for surveys. The evaluation team randomly selected and recruited program participants from the population of Efficient Buildings program participants that had valid contact information.

The following subsections report results on company demographics, sources of program awareness, motivations for participation, and program satisfaction. Throughout the analysis described here, we present the survey results as weighted percentages based on the proportion of savings represented by survey respondents relative to the total savings of all program respondents.

3.2.2 COMPANY DEMOGRAPHICS

The evaluation team asked survey respondents whether their company owns or leases the building where the project was completed. Eighty-seven percent of respondents with direct install projects and 100 percent of respondents with non-direct install projects reported that they own their building. Figure 2 shows a breakdown of the participants.

Figure 2 : Participant Building Ownership



All survey respondents were also asked about the building size and the number of employees at their company. Figure 3 shows that most businesses serviced through the direct install program were over 10,000 square feet in size (79%), with 17 percent of those buildings being over 100,000 square feet, suggesting a trend towards larger buildings. Nearly all businesses serviced through the non-direct install program were over 10,000 square feet (97%), but only five percent were over 100,000 square feet. There was less variation in building size for businesses serviced through the non-direct install program compared to the direct install program.

Figure 4 presents the number of full-time employees at respondents' companies. Direct install projects were more commonly completed by smaller businesses, with 84 percent reporting 99 or fewer employees. In contrast, non-direct install projects were more commonly completed by larger businesses, with 94 percent reporting 500 or more full-time employees.

Figure 3 : Participant Building Square Footage

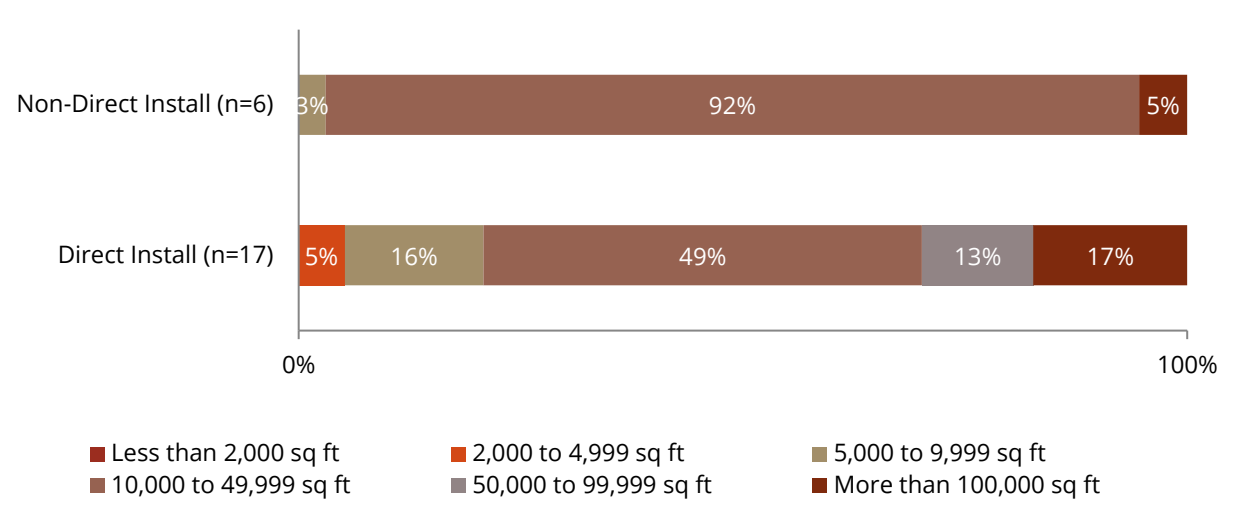
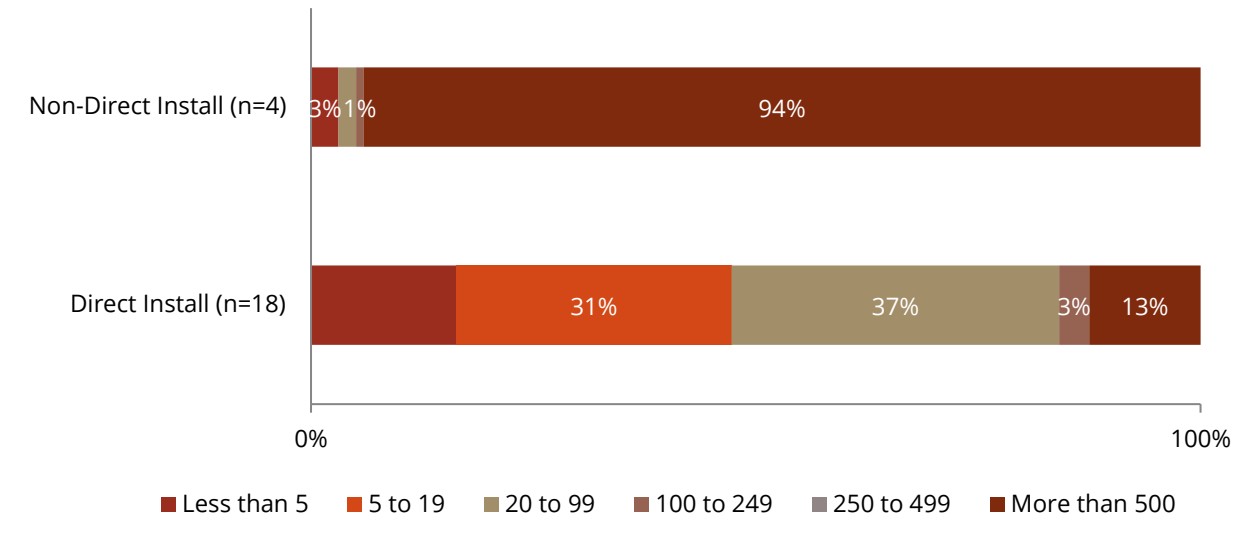
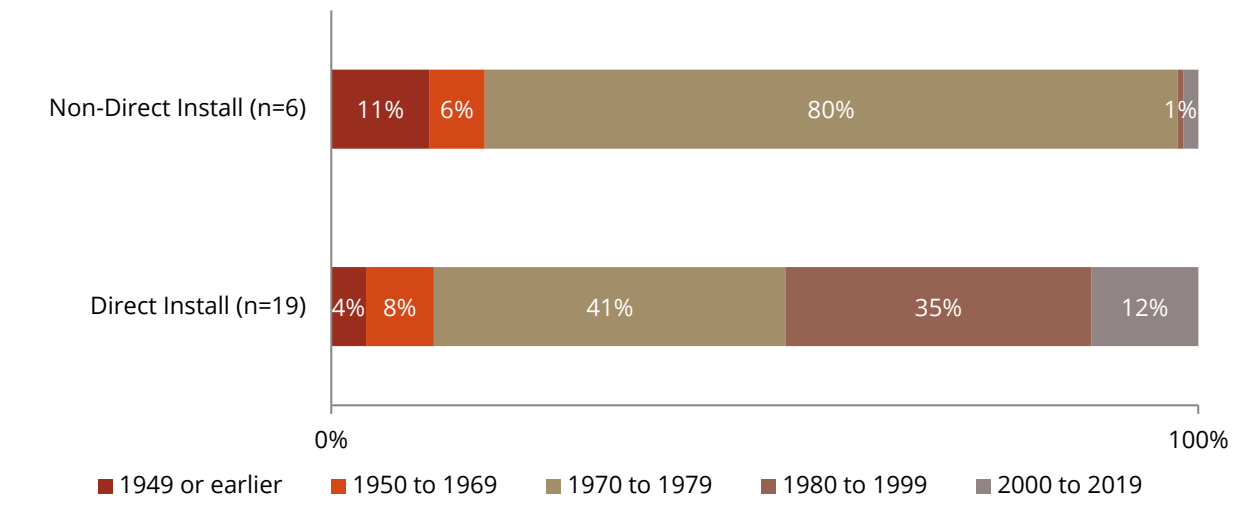


Figure 4 : Participant Number of Full-Time Employees



When asked to report the year their buildings were built, a majority of both direct install and non-direct install respondents indicated that their buildings were constructed after 1969 as displayed in Figure 5. Specifically, 88 percent of direct install respondents estimated that their building was built after 1969, while 83 percent of non-direct install respondents reported buildings constructed after 1969. Notably, direct install respondents had a larger percentage of newer buildings, with 35 percent constructed between 1980 and 1999, and 12 percent built in 2000 or later.

Figure 5 : Participant Building Age

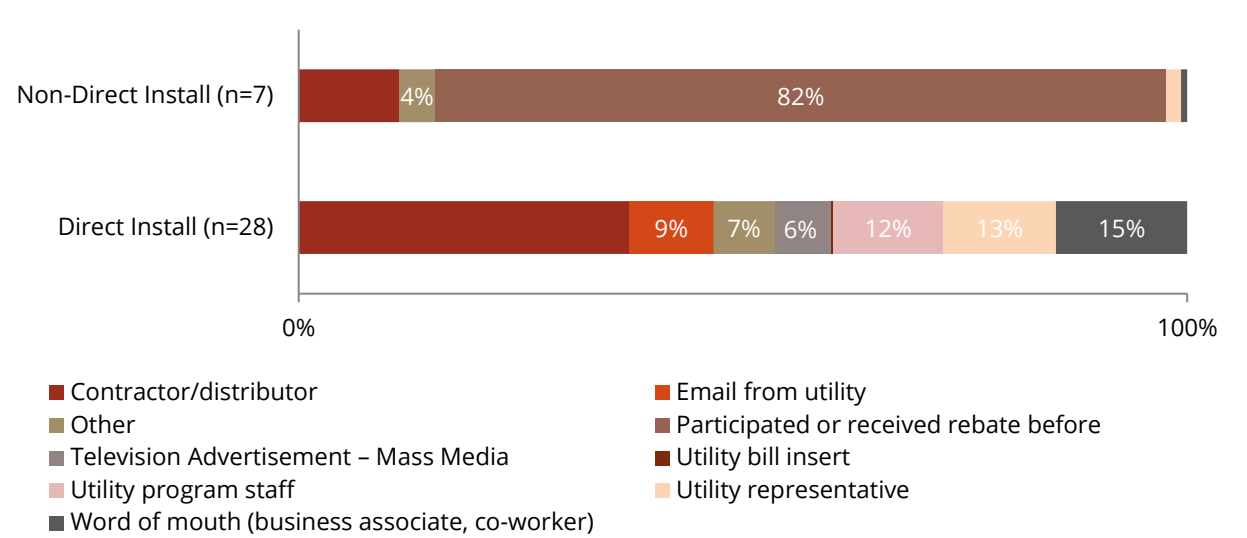


3.2.3 SOURCES OF AWARENESS

Efficient Buildings program respondents became aware of the program rebates and assistance through a variety of sources, including contractors, distributors, suppliers, utility representatives or utility marketing, and friends/referrals.

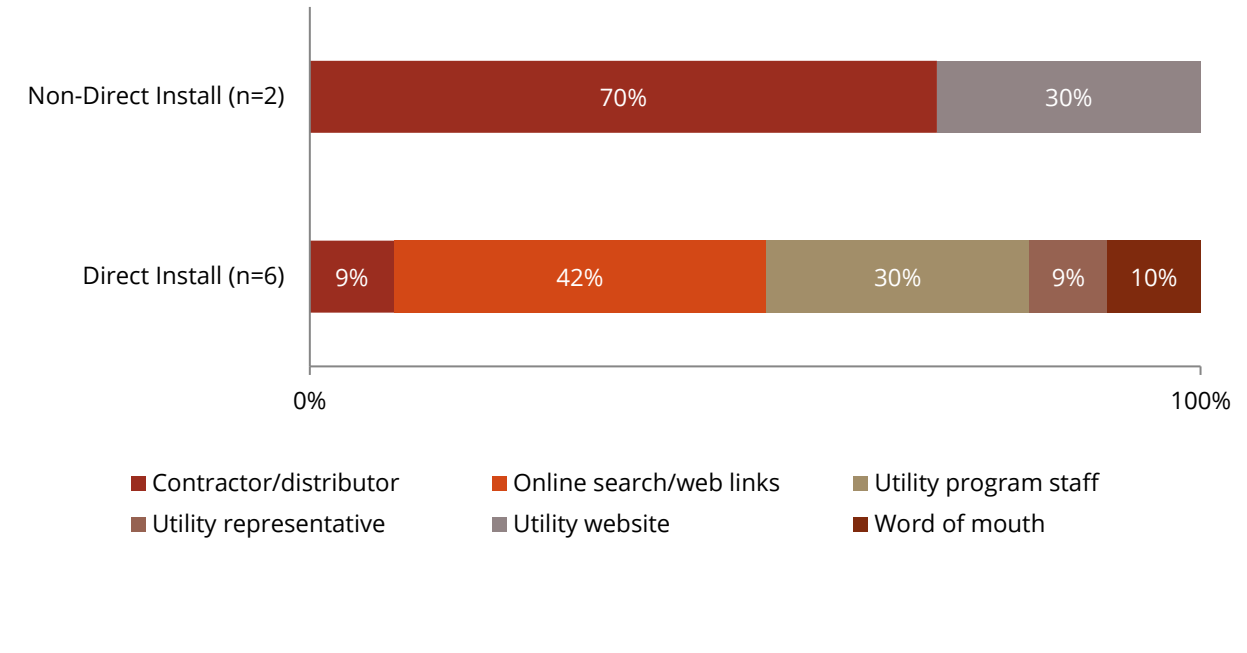
Figure 6 shows that non-direct install respondents most commonly reported first hearing about the program from having participated or received a rebate before (82%), while direct install respondents most commonly reported first hearing about the program through a contractor or distributor (37%). Interestingly, while most of the non-direct install respondents heard about the program from prior participation, direct install respondents' responses were more diversified, with word of mouth and utility representatives being the next most common sources (15% and 13%, respectively).

Figure 6 : Initial Source of Awareness



Respondents were then asked to elaborate on other sources their company used to gather information about the program, beyond the initial source of awareness. As shown in Figure 7, most non-direct install respondents reported gathering information from a contractor or distributor (70%), while direct install respondents identified online search or utility program staff as the most common other sources (42% and 30%, respectively).

Figure 7 : Other Sources of Awareness

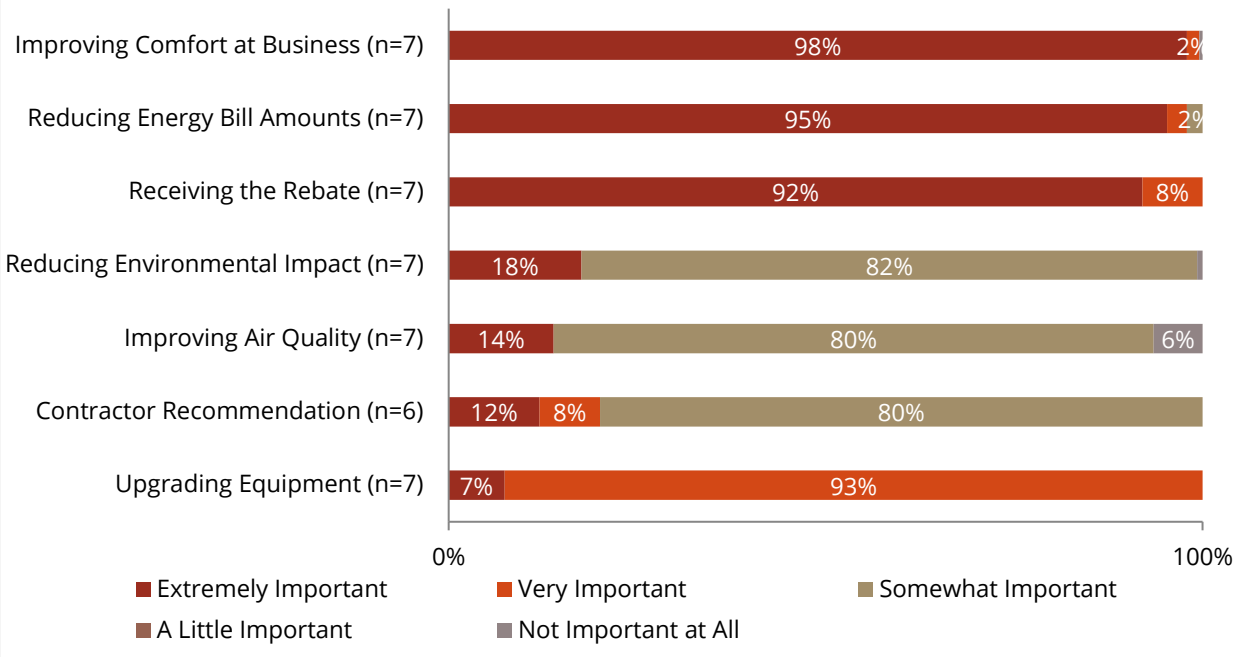


When asked to identify which source was the most useful in their decision to participate in the program, 14 percent of direct install respondents and 13 percent of non-direct install respondents said word of mouth. The remaining respondents did not answer this question.

3.2.4 MOTIVATIONS FOR PARTICIPATION

Non-direct install respondents were asked about the level of importance they placed on a variety of factors that might have influenced their participation in the program. As shown in Figure 8, respondents cited improving comfort at their business, reducing energy bill amounts, and receiving the rebate as extremely important factors. Upgrading equipment was also a significant factor, with 93 percent of respondents rating it as very important. Notably, environmental concerns such as reducing environmental impact and improving air quality were rated as mostly "somewhat important".

Figure 8 : Motivations for Participation, Non-Direct Install Respondents



In addition to being asked about motivations for participating, non-direct install respondents were given a list of potential program and non-program factors that may have influenced their decision about how energy efficient their equipment would be. They were then asked to rate the importance of those factors on a 0-to-10-point scale[8]. Figure 9 shows that 100 percent of respondents rated the

[8] On the 0-to-10-point scale, 0 indicated "not at all important" and 10 indicated "extremely important."

contractor who performed the work, endorsement/recommendation by a retailer, and endorsement/recommendation by a contractor as extremely important. Conversely, Gas Company marketing/informational materials were deemed the least important, with 87 percent of respondents rating them as only a little important.

Figure 9 : Importance of Program Factors, Non-Direct Install Participants

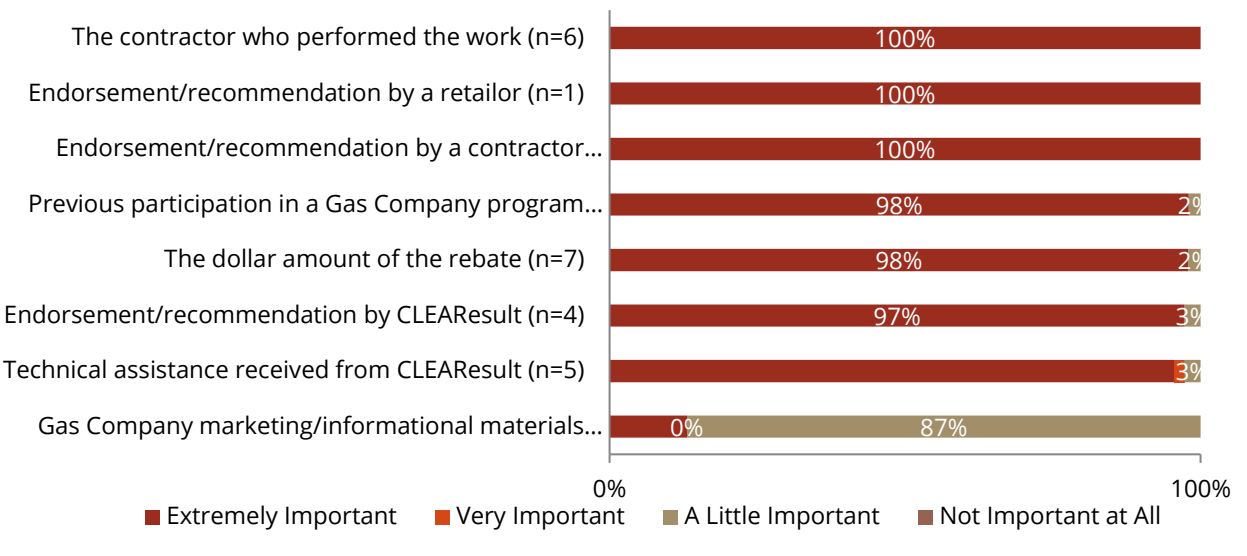
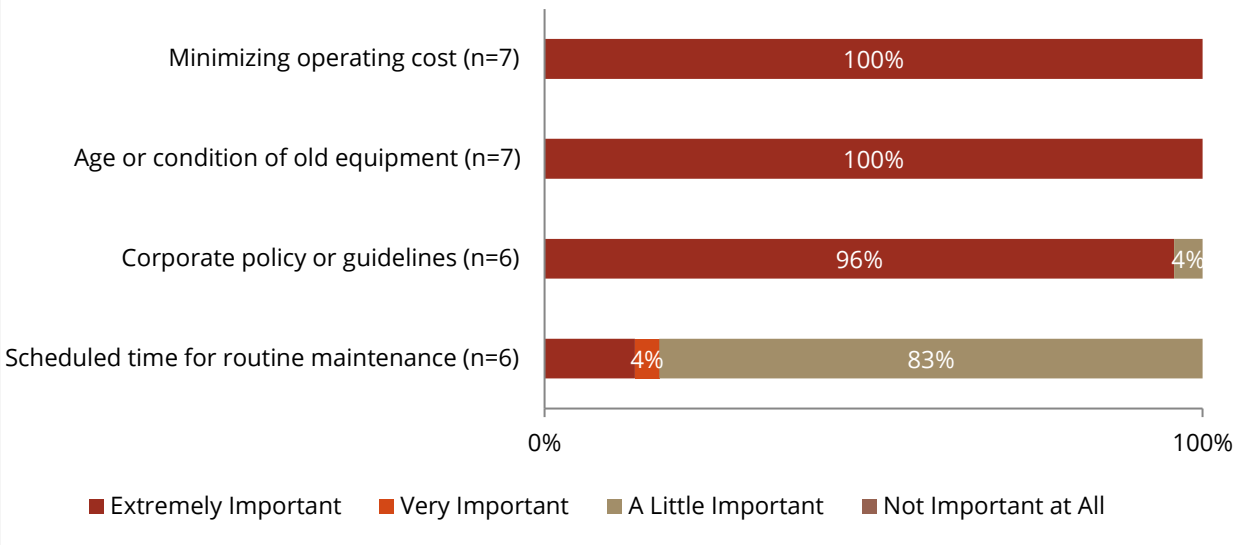


Figure 10 shows that minimizing operating costs and the age or condition of the old equipment were the most influential non-program factors, with 100 percent of respondents rating those factors as extremely important. Corporate policy or guidelines also played a significant role, with 96 percent of respondents rating it as extremely important. Conversely, scheduled time for routine maintenance had the highest percentage of respondents ranking it as only a little important, with 83 percent of respondents indicating this in their decision to determine the efficiency level of their equipment.

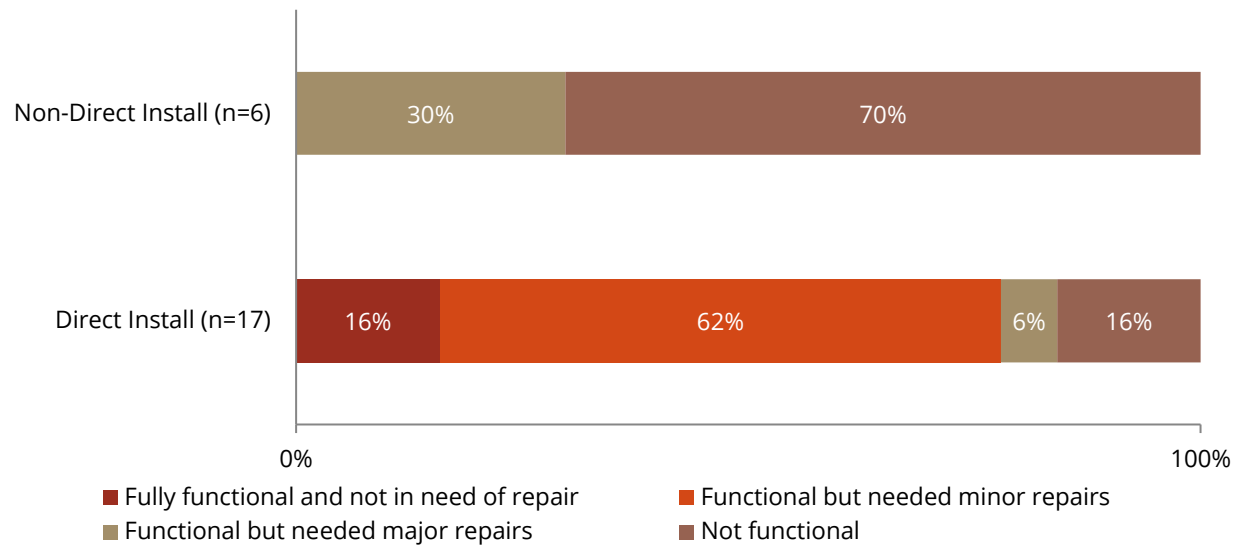
Figure 10 : Importance of Non-Program Factors, Non-Direct Install Respondents



All direct install and non-direct install respondents were asked if the equipment that their firm installed replaced existing equipment. Respondents who answered affirmatively were then asked about the condition of the replaced equipment. Figure 11 showcases the results of that survey question. Among non-direct install respondents, 70 percent reported that the equipment was not functional, while 30 percent indicated it was functional but needed major repairs. This suggests that non-direct install respondents are more likely to replace completely failed equipment.

Responses were more varied for direct install respondents, but the majority (62 percent) reported replacing functional equipment that needed minor repairs. This suggests that direct install respondents replace equipment in a broader range of conditions but are more likely to replace equipment that is still functional.

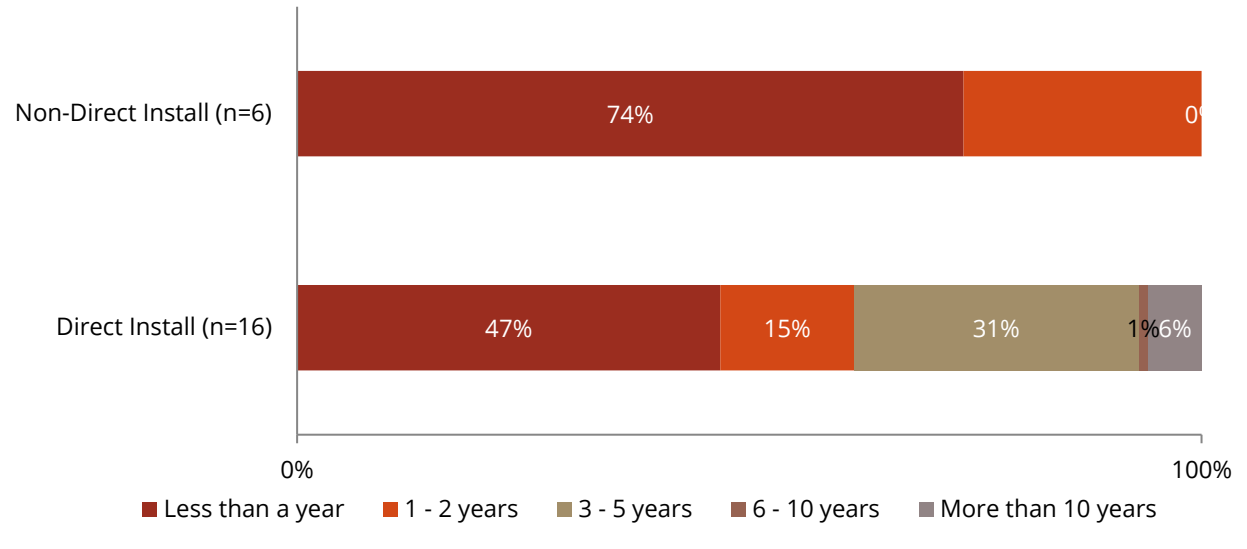
Figure 11 : Condition of Replaced Equipment



All respondents were then asked to assess the remaining life of their replaced equipment. Figure 12 showcases the results of that survey question. For non-direct install respondents, 74 percent said the remaining life was less than a year, and 26 percent said it was one to two years. This indicates that non-direct install respondents are more likely to replace equipment near the end of its life.

Direct install respondents had more varied responses, with 47 percent reporting less than a year, 15 percent reporting one to two years, and 31 percent reporting three to five years. This suggests that direct install respondents often replace equipment that has a longer remaining lifespan, indicating a proactive approach to improving energy efficiency.

Figure 12 : Remaining Life of Replaced Equipment



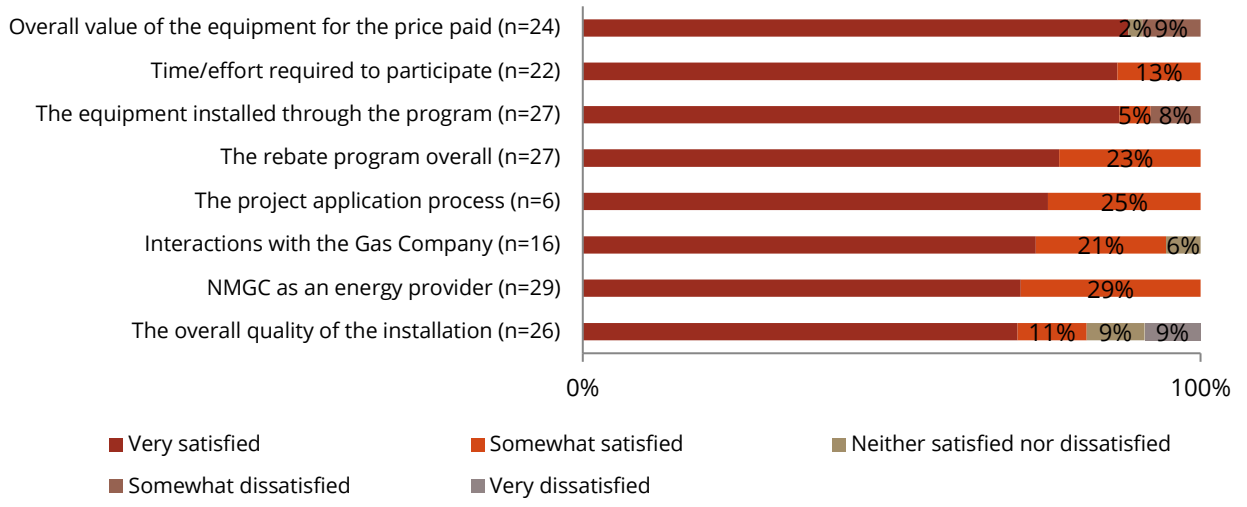
3.2.5 PARTICIPANT SATISFACTION

The respondents evaluated their satisfaction with various components of the Efficient Buildings program on the following scale: very satisfied, somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied, and very dissatisfied. The individual components that respondents were asked to rank their satisfaction with included:

- NMGC as an energy provider
- The rebate program overall
- The equipment installed through the program
- The contractor who installed the equipment
- Overall quality of the equipment installation
- The time it took to receive the rebate
- The dollar amount of the rebate
- Interactions with NMGC
- The overall value of the equipment for the price they paid
- The time and effort required to participate
- The project application process

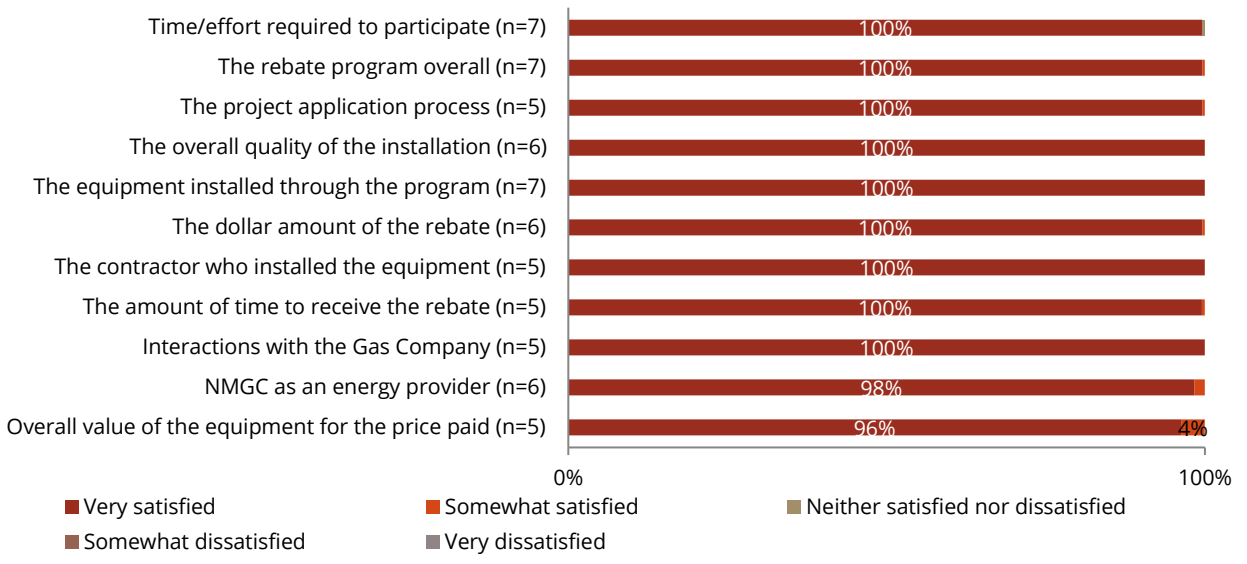
Figure 13 and Figure 14 summarize the satisfaction levels for direct install and non-direct install respondents. Overall, survey respondents expressed high levels of satisfaction with the direct install and non-direct install program components. Direct install respondents expressed high levels of satisfaction across each individual program component, with the majority of respondents reporting being very satisfied (Figure 13). However, nine percent of respondents were very dissatisfied with the overall quality of the installation.

Figure 13 : Direct Install Participant Program Satisfaction



As shown in Figure 14, non-direct install respondents also expressed high levels of satisfaction, with over 96 percent of respondents reporting being very satisfied with all 11 program components.

Figure 14 : Non-Direct Install Participant Program Satisfaction



3.3 FINDINGS AND RECOMMENDATION

Finding: The evaluation team modified savings for three projects in the sample that installed efficient commercial kitchen gas fryers. The supplied energy savings calculations utilized the average value of gas savings (therms) for various facility types for both the Standard and Large Vat fryers in the savings algorithm. The modification decreased the savings for the projects.

Recommendation: Use the deemed savings values listed in the NMGC Commercial Kitchen Work Papers for the applicable facility type. The implementation team was made aware of this finding and is working with the evaluation team to improve their methodology to accurately capture savings.

Finding: The evaluation team was unable to locate the source for the claimed ex ante savings for a faucet aerator project (EA-0003022643) and a steam trap project (EA-0002203525). The project files provided did not list the claimed savings value listed in the tracker.

Recommendation: Provide calculation files or workbooks with claimed savings for projects that the evaluation team can review.

Finding: The evaluation team adjusted the savings for a chiller replacement project (EA-0001553249) where the implementer had added an electric penalty to account for the incentive the customer received from the electrical utility.

Recommendation: The New Mexico natural gas UCT does not require considering the electric penalty for projects with both electric and gas savings. The evaluation team recommends that the

implementation team remains cognizant of projects that receive an incentive from both gas and electrical utilities.

3.4 EFFICIENT BUILDINGS NET IMPACTS

Beginning in 2021, the impact evaluation moved to applying new net-to-gross (NTG) ratios prospectively in future years, rather than retrospectively as had been done in prior years. The evaluation team prospectively calculated NTG ratios during the PY2022 evaluation. The prospective NTG ratios were used to calculate the verified net savings. The NTG ratios calculated in PY2023 will then be applied to the PY2024 results.

Net impacts for the Efficient Buildings program were calculated using an NTG ratio that was developed using the self-report method described in the Evaluation Methods section using participant phone survey data. For all direct install projects and steam trap projects (which involved a steam trap test provided by the program), an NTG ratio of 1.00 was applied [9]. The resulting NTG ratio for the Efficient Buildings program overall is 0.9190. This is a weighted average of the NTG ratio for custom and prescriptive projects from the participant survey and the assumed NTG ratio of 1.00 for direct install projects. Table 13 summarizes the PY2023 net impacts for the Efficient Buildings program using the NTG ratio described above. The program NTG was determined Net realized savings for the program overall are 1,572,461 therms.

Table 13 : PY2023 Efficient Buildings Net Impact Summary

Program	#of Projects	Realized Gross Savings	NTG Ratio	Realized Net Savings
Efficient Buildings	234	1,711,057	0.9190	1,572,461

For the net impact self-report analysis, the evaluation team was able to complete interviews with 36 of the 79 customers that had valid contact data. Of the 36 surveyed, 30 were direct install and steam trap audit customers and were assigned a net-to-gross value of 1.0. The remaining six customers from the custom and prescriptive sub-programs were asked the free-ridership question battery. Based on the self-approach method described earlier, the team calculated a free-ridership rate of

[9] NMGC currently has an ex ante NTG ratio of 1.00 for direct install projects, and the evaluation team agrees this is appropriate, as the targeted customers are very unlikely to complete these projects on their own. This is analogous to assigning an NTG ratio of 1.00 to low-income programs, which is typically done for the same reason.

0.2538 that resulted in an overall net-to-gross ratio of 0.7462. This new ratio includes direct install and steam trap customers along with the custom and prescriptive projects.

The current net-to-gross ratio is 0.9190 for this program, which was calculated by the evaluation team as part of the PY2022 evaluation. Given that the new value of 0.7462 is a significant drop from the current value and is based on a small sample of participants who were asked the free-ridership question battery (n = 6), we have averaged the two values to get a final net-to-gross ratio of 0.8326. This new value will be applied to the Efficient Buildings program beginning in PY2024.

4 INCOME QUALIFIED

For the PY2023, the evaluation team focused our research on completing additional process evaluation for the components of this program. The evaluation team will continue this process research in PY2024 in addition to an impact evaluation of the program.

There is ongoing process research for Native American Communities, Community Grants, and Mobile Home Communities components of this program. The evaluation team will provide these findings in a separate memo as an attachment to this evaluation report.

4.1 WEATHERIZATION ASSISTANCE PROGRAM PARTICIPANT SURVEYS

The evaluation team conducted surveys with participants of the NMGC Weatherization Assistance Program. None of the participants reported involvement in other NMGC programs related to receiving rebates for energy efficiency upgrades. These surveys, ranging from 15 to 20 minutes in length, were designed to cover the following topics:

- Verifying the installation of measures included in the program tracking database
- Collecting information on participants' sources of program awareness
- Motivations for participation
- Additional process evaluation topics

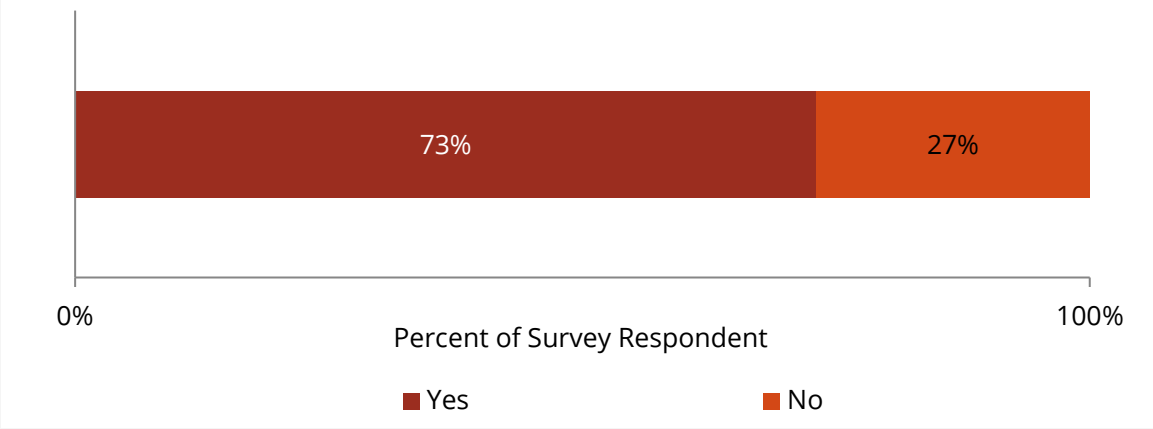
The implementer, MFA, provided program data on the Weatherization Assistance Program participant projects, which allowed us to select a sample for surveys. The evaluation team randomly selected and recruited participants from the population of Weatherization Assistance Program participants that had valid contact information. The evaluation team was provided with contact information for 28 customers and completed 12 interviews.

The following reports results from the survey including pro-program need for equipment replacement and maintenance, sources of program awareness, and motivations for participation.

4.2 EQUIPMENT REPLACEMENT AND MAINTENANCE

We asked the survey respondents a number of questions about their decisions regarding equipment replacement and maintenance. Figure 15 shows the breakdown of responses from participants who were asked if their installation replaced existing equipment. The majority (73%) stated that it did, while 27 percent reported it did not replace existing equipment.

Figure 15 : Installation Intended to Replace Existing Equipment (n = 11)



We then asked the respondents that conducted a replacement to assess the condition of the equipment at the time of replacement and to evaluate the urgency of the replacement. As shown in Figure 16, 63 percent of the survey respondents reported that although the equipment was past its useful life, it was still functioning. Additionally, half of the respondents stated that while the replacement of the equipment was somewhat urgent, it could have waited for a few more weeks, as shown in Figure 17.

Figure 16 : Condition of Existing Equipment (n = 8)

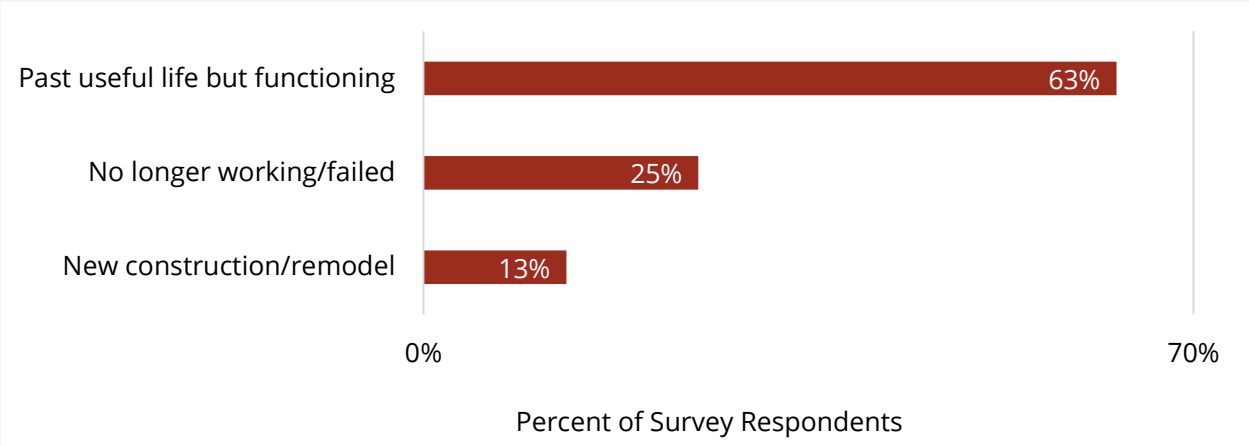
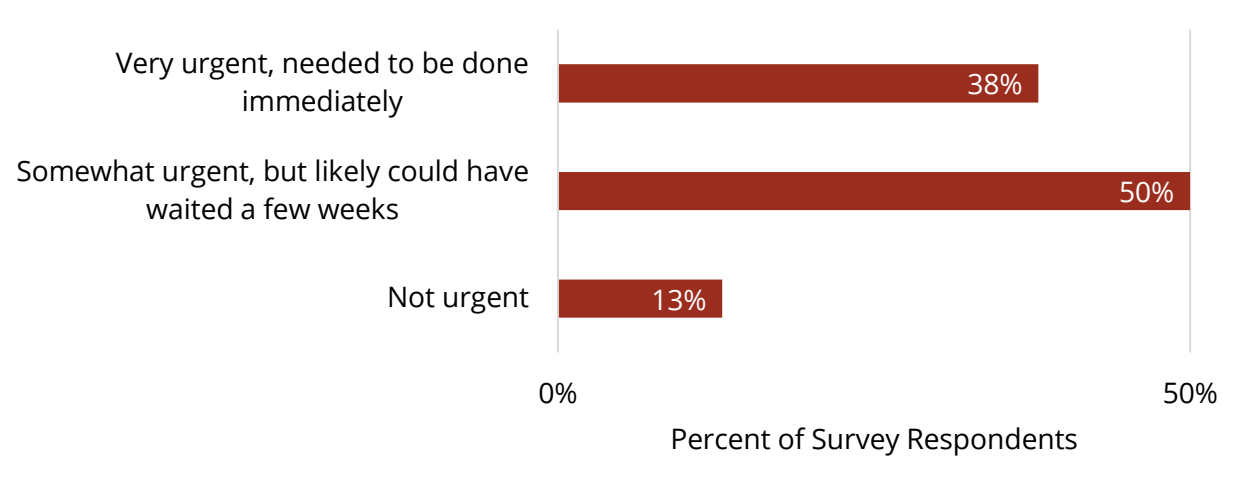


Figure 17 : Urgency of Equipment Replacement (n = 8)



4.3 SOURCES OF AWARENESS

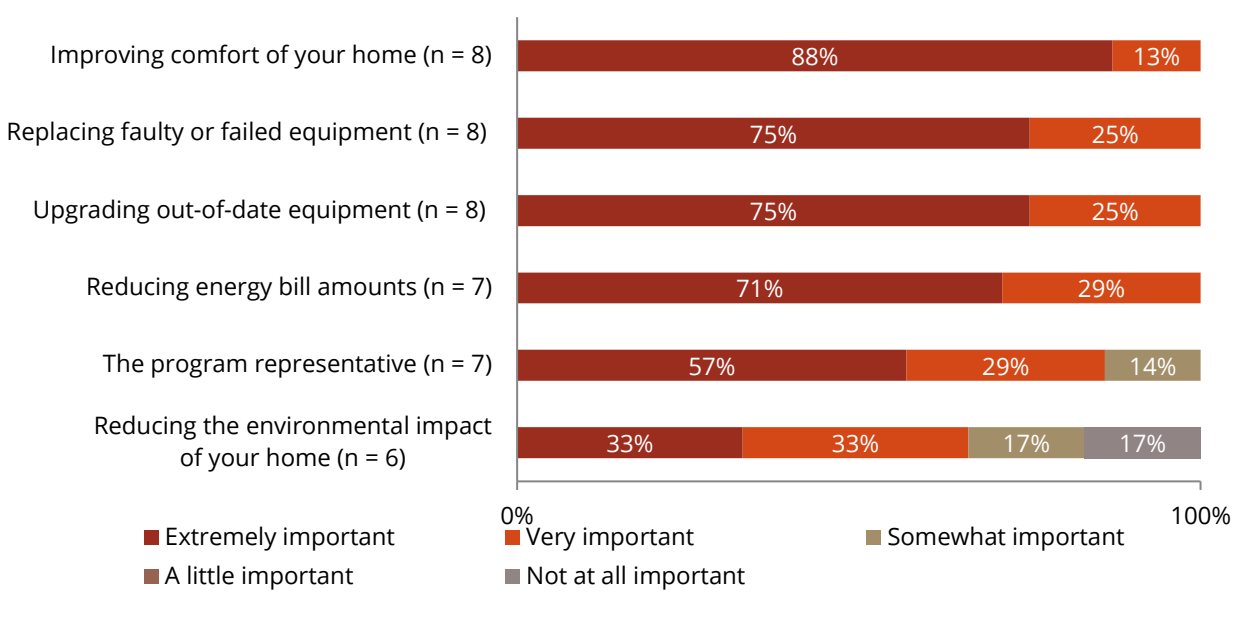
Participants were asked about how they first became aware of the program, choosing from a variety of channels including contractors, retailers, and word of mouth. Of the eight respondents who answered this question, two could not recall their initial channel of awareness. Among the remaining six respondents, the most commonly cited source of information was through friends or referrals, with three indicating this. Other categories, such as social media and bill inserts, were less influential, with each cited by only one respondent. The two respondents who learned about the program through other means both mentioned other energy efficiency initiatives, such as the Central New Mexico Weatherization program. This suggests that involvement in and collaboration with other similar programs and organizations could be effective in raising awareness.

4.4 MOTIVATIONS FOR PARTICIPATION

Respondents were asked to rate a variety of factors that might have been important in their decision to participate in the program. The majority of survey respondents rated all factors as “very important” or “extremely important” in their decision to participate in the program (Figure 18). Improving the comfort of one’s home was the most important factor, with all of the respondents reporting it as “very” or “extremely” important. In contrast, reducing the environmental impact of their home was the least important factor, though still significant, with 66 percent reporting it as “very” or “extremely” important, and 17 percent stating that it was “not at all” important for them. This suggests that while environmental benefits are valued, they may be secondary to the immediate personal benefits of increased comfort.

Other reasons provided by two of the respondents included wanting to improve their overall quality of life through the upgrades, as well as the fortuitous timing of the availability of the rebates when they needed to upgrade all of their equipment.

Figure 18 : Motivations for Participation



4.5 INCOME QUALIFIED NET IMPACTS

Beginning in 2021, the impact evaluation moved to applying new net-to-gross (NTG) ratios prospectively in future years, rather than retrospectively as had been done in prior years. The PY2022 NTG ratios are being applied to the PY2023 results. The NTG ratios calculated in PY2023 will then be applied to the PY2024 results.

For net impacts, the NTG ratio for the Income Qualified program is stipulated at 1.00 because the program serves only low-income customers. As a result, the net realized savings are equal to the gross verified savings. The final realized gross and net savings in therms are shown in Table 14.

Table 14 : PY2023 Income Qualified Net Impact Summary

Program	#of Projects	Realized Gross Savings	NTG Ratio	Realized Net Savings
Income Qualified	599	267,607	1.0000	267,607

5 ENERGY STAR WATER HEATING PROGRAM

5.1 ENERGY STAR WATER HEATING GROSS IMPACTS

The ex ante PY2023 impacts for the ENERGY STAR Water Heating ("Water Heating") program are summarized in Table 15. In total, the Water Heating program accounted for 11 percent of the ex ante energy impacts in NMGC's overall portfolio. The programs evaluated in 2023 are highlighted in gold.

Table 15: PY2023 Water Heating Ex Ante Savings Summary

Subprograms	Number of Projects	Expected Gross Therms Savings
ENERGY STAR Water Heating – Commercial Midstream	28	17,949
ENERGY STAR Water Heating – Downstream	285	30,744
ENERGY STAR Water Heating – Retail Water Heating	55	59
ENERGY STAR Water Heating – Residential Midstream	502	50,434
Showerhead Kits	15,652	171,664
Income Qualified Kits	7,800	121,938
Franklin Kits	659	13,036
Total	24,981	405,825

The majority of the gross impact evaluation activities were devoted to engineering desk reviews of a sample of projects. The sample was stratified to cover several measure types so that no single measure would dominate the desk reviews. The final sample design is shown in Table 16. The resulting sample achieved a relative precision of 90/1.2 overall.

Table 16: PY2023 Water Heating Desk Review Sample

Measure Group	Count	Average Therms	Total Therms	% of Savings	Final Sample
ENERGY STAR Water Heating – Commercial Midstream	28	641	17,949	4.57	12
ENERGY STAR Water Heating – Downstream	285	108	30,744	7.83	21
ENERGY STAR Water Heating – Retail Water Heating	55	1.07	59	0.01	1
ENERGY STAR Water Heating – Residential Midstream	502	100	50,434	12.84	34
Showerhead Kits	15,652	10.97	171,664	43.70	-
Income Qualified Kits	7,800	16	121,938	31.04	-
Franklin Kits	659	19.78	13,036	43.70	-
Total	**24,981**		**405,825**	**100.00**	**68**

As discussed in the Evaluation Methods section, the evaluation team determined gross realized impacts for the Water Heating program by performing engineering desk reviews on the sample of projects. The program implementation contractor utilized the deemed savings proposed in the New Mexico TRM Measure 4.9 Efficient Water Heaters. The parameters and assumptions used in these savings calculations were reviewed by the evaluation team and verified using invoices and program tracking data.

For the projects that received engineering desk reviews, the evaluation team adjusted two projects, which impacted the realization rates slightly.

- The evaluation team applied the correct deemed savings for an ENERGY STAR Storage Tank Water Heater project as per the old storage water heater tank size and bedrooms in the house.
- The evaluation team found an Appliance Gas Dryer project where the implementer used the minimum required efficiency for a vented gas dryer instead of the efficiency provided by the AHRI documentation. This led to a therm realization rate of 105% for the project. It is recommended that the implementation team utilize AHRI certified efficiency values to calculate savings.

Table 17 shows the results of the desk reviews and how the resulting engineering adjustments were used to calculate realized savings. For the Water Heating program overall, these adjustments resulted in an average engineering adjustment factor of 1.00 for therms.

Table 17: PY2023 Water Heating Gross Impact Summary

Sub Program	# of Projects	Expected Gross Savings	Engineering Adjustment Factor	Realized Gross Savings
ENERGY STAR Water Heating – Commercial Midstream	28	17,949	1.00	17,949
ENERGY STAR Water Heating – Downstream	285	30,744	1.00	30,744
ENERGY STAR Water Heating – Retail Water Heating	55	59	1.00	59
ENERGY STAR Water Heating – Residential Midstream	502	50,434	1.00	50,434
Total	**870**	**99,187**	**1.00**	**99,187**

A summary of the individual desk review findings for each of the reviewed projects are included in Attachment E.

5.2 PROCESS EVALUATION

The evaluation team recruited participants from the list of participating distributors that had valid contact information. The evaluation team was able to complete one interview with a distributor from the PY2023 NMGC midstream Water Heating and Space Heating Program. This contact was from a pool of 17 potential distributors and all of whom had interacted with the Water Heating and Space Heating Program. For this evaluation round, the interview covered the following topics:

- Distributor background
- Program awareness and engagement
- Program process and market response
- Free ridership-related questions
- Program satisfaction

This section primarily presents results qualitatively to show the range of perceptions and responses of the respondent, while some quantitative results are included to provide further context.

5.2.1 DISTRIBUTOR BACKGROUND

The distributor confirmed their participation in the NMGC Water Heating Program. They work as a wholesaler, selling a variety of equipment eligible for rebates through the program to contractors who then install the equipment for customers.

5.2.2 PROGRAM AWARENESS AND ENGAGEMENT

The evaluation team asked the distributor to describe how they first learned about the NMGC Water Heating Program and to elaborate on their experience with the program process. The distributor explained that they first engaged with the program in 2023, when they were set up with their NMGC representative.

The distributor stated that the program has been very easy and simple to work with, and their representative has been invaluable. Additionally, the distributor mentioned that they received training when they first got set up, during which the program requirements were communicated very clearly. They also noted that their representative provided helpful support and was available for any needed clarification.

The distributor highlighted the value of the rebates, noting that it helps them provide value to their contractors. They already stocked items that qualified for the rebate, and the contractors usually specify the equipment they need. If that item qualifies for a rebate, the distributor assists by providing the necessary information and guiding the contractors through the rebate process.

The evaluation team asked the distributor to quantify the importance of various factors in influencing the energy efficiency level of the equipment chosen. The distributor was asked to rate the importance of the various factors on a scale of 0 to 10, with 0 being “not at all important” and 10 being “extremely important.” When asked to rate the importance of the technical assistance received from the NMGC representative, the distributor gave it a 10, stating that their representative “is awesome!” They highlighted the value of their representative in providing training, technical assistance, and resources. This support has complemented their commitment to their customers, enhancing their ability to offer good value and a high level of customer service.

5.2.3 PROGRAM PROCESS AND MARKET RESPONSE

The evaluation team asked the distributor a series of questions about why they chose to participate in the NMGC Water Heating Program. The distributor highlighted the simplicity of participating in the program and mentioned the administrative paperwork was "easy". They thought that the process was straightforward.

When asked about discussing the rebates with the contractors, the distributor shared that their customers were already aware of the program and had suggested to NMGC that the distributor should participate. As a result, the NMGC representative reached out to the distributor, provided the necessary training, and offered information to help them get started.

5.2.4 PROGRAM SATISFACTION

The evaluation team asked the distributor to quantify their level of satisfaction with the program. The distributor was asked to rate their satisfaction on a scale of 1 to 5, with 1 being "not at all satisfied" and 5 being "very satisfied." The distributor could also indicate if they were particularly satisfied or dissatisfied with anything specific, and if their contractors were satisfied.

Overall, the distributor expressed a high level of satisfaction with the program. They rated the program a 5 ("very satisfied"), citing benefits such as strong support, valuable educational resources, and attractive rebates. When considering their contractors' perspectives, the distributor also rated the program a 5 ("very satisfied").

Given the relatively high level of satisfaction, the distributor did not share any direct suggestions for improving the program. They reiterated their satisfaction and appreciation for the support from their NMGC representative, expressing that they think very highly of them.

5.3 WATER HEATING NET IMPACTS

Beginning in 2021, the impact evaluation moved to applying new net-to-gross (NTG) ratios prospectively in future years, rather than retrospectively as had been done in prior years. The PY2022 NTG ratios are being applied to the PY2023 results. The NTG ratios calculated in PY2023 will then be applied to the PY2024 results.

Net impacts for the Water Heating programs were calculated using NTG ratios from the participant phone survey. For the Water Heating program, the NTG ratio was developed using the self-report method described in the Evaluation Methods chapter using participant survey data. The survey questions were modified in the current evaluation to more clearly emphasize the role that the NMGC program was having on just the efficiency level of the chosen equipment, and not the overall decision on whether or not to purchase a new furnace of water heater. Table 18 summarizes the NTG ratios for each Water Heating subprogram. In PY2023 the programs highlighted in the table received a process evaluation.

Table 18: PY2023 Water Heating Net Impact Summary

Water Heating Subprograms	Realized Gross Savings	NTG Ratio	Realized Net Savings
Commercial Midstream	17,949	1.0000	17,949
Downstream	30,744	0.5854	17,998
Retail Water Heating	59	1.0000	59
Residential Midstream	50,434	0.5854	29,524
Retail Water Heating - Showerheads	108,883	1.0000	108,883
Direct Mail Kits	62,781	1.0000	62,781
Energy Efficient Kits	121,938	1.0000	121,938
Franklin Efficient Kits	13,036	1.0000	13,036
Total	**405,825**	**0.9171**	**372,169**

Despite conducting six rounds of outreach to the Water Heating distributors and involving NMGC and ICF in more targeted outreach efforts, the evaluation team was only able to interview one distributor. Since only one distributor completed an interview for the Water Heating and Program and did not answer the full suite of free-ridership questions, there is not enough data to calculate a PY2023 net-to-gross ratios for the Water Heating Program.

The evaluation team recommends applying the net-to-gross ratios used for ENERGY STAR Water Heating, ENERGY STAR Space Heating – Furnace, ENERGY STAR Space Heating – Insulation, and ENERGY STAR Space Heating – Smart Thermostat from PY2022 to PY2024. The evaluation team will then conduct a comprehensive outreach effort in the summer or fall of 2024 to interview additional distributors and calculate net-to-gross ratios that will be applied to the program in PY2025.

6 HOME ENERGY REPORTS PROGRAM

The NMGC Home Energy Reports (HER) program provides customers with information on their energy consumption that includes a "neighbor comparison" with a matched set of similar households. This normative comparison is delivered via email or regular mail and motivates recipients to conserve energy. The HER messaging also includes tips on how to reduce energy consumption. Approximately 140,000 of NMGC's residential accounts received HERs in January 2024 for the first time.

NMGC's HER program currently consists of a single wave that was delivered as a randomized controlled trial (RCT). In the RCT framework, the program implementer randomly assigns customers to either a treatment group (receives the HERs) or a control group (does not receive the HERs). This framework facilitates the measurement of the HER treatment effect. At a high level, consumption in the control group serves as a baseline for what consumption in the treatment group would be absent behavioral changes due to HER delivery. By group, Table 19 summarizes the average number of active households during PY2023. About 40,000 treatment homes were treated by email and about 100,000 were treated by delivery mail.

Table 19: NMGC HER Cohorts Summary

Program Start Date	Mail Treatment Group	Email Treatment Group	Control Group Size
1/18/2024	99,880	40,576	9,731

Using a lagged dependent variable (LDV) model, we estimate that the HER program saved **61,950 therms** during PY2023. Because the HER program was launched in January, savings could only accrue during the final two months of PY2023.

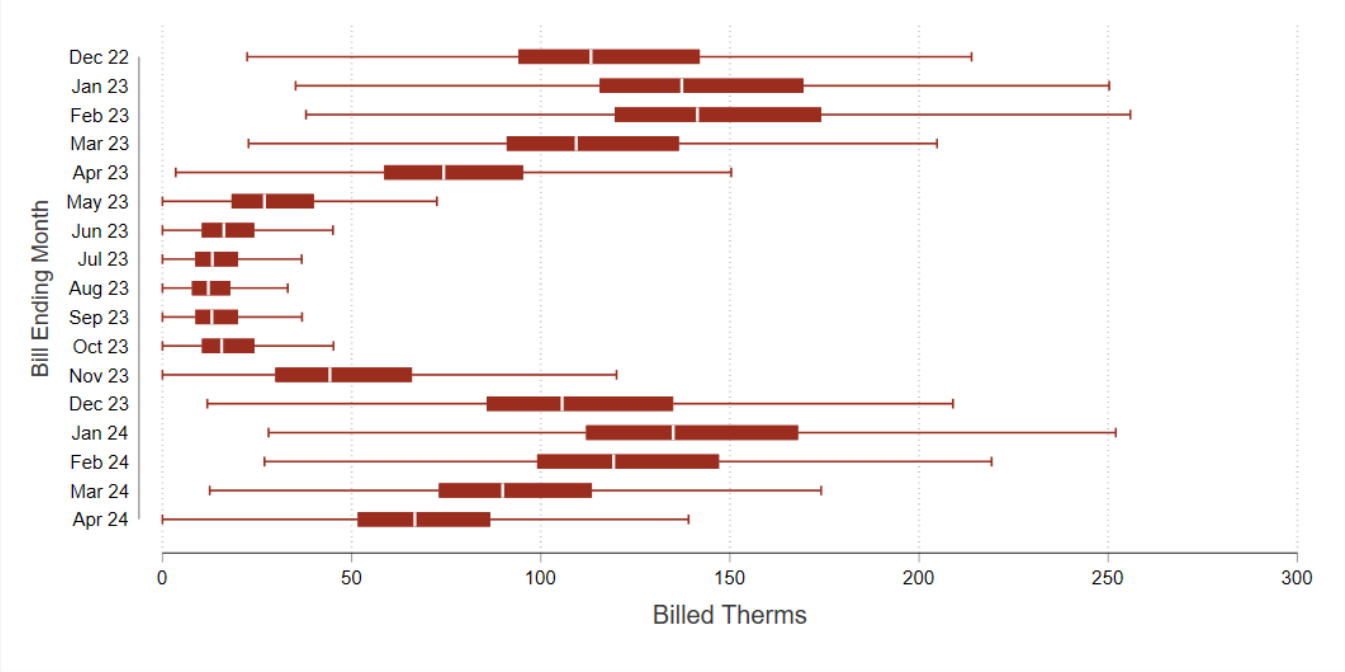
6.1 METHODOLOGY

6.1.1 INPUT DATA

The primary data used for this analysis was monthly gas billing data for the treatment and control group homes. We have billing data starting on bills with billing dates ending in December 2022 (beginning in November 2022) and ending on bills ending in April 2024 (beginning in March 2024), meaning we have complete billing data for the calendar months December 2022 through March 2024 and partial results for November 2022 and April 2024.

Some key fields in the billing data are billed consumption, cycle start date, and cycle end date. By month, Figure 19 shows the distribution of billed therms across all bills in our data set (roughly 2.4 million total bills). Consumption is highest in the winter months and lowest in the summer months.

Figure 19: Distribution of Billed Therms by Month



6.1.2 CALENDARIZATION

Because billing cycles typically span two calendar months and read dates vary from customer to customer, we "calendarized" the billing data before estimating energy impacts. In calendarizing the data, the goal is to prorate billing data into a calendar month basis shared by all participants. This process is described through the example below. Table 20 contains four months of simulated billing data. The data and time periods are hypothetical and not from an actual NMGC customer.

Table 20: Simulated Billing Data

Billing Period	Nov 12th – Dec 11th	Dec 12th – Jan 11th	Jan 12th – Feb 11th	Feb 12th – Mar 11th
Usage (Therms)	111.9	129.9	109.7	101.1
Average Daily	3.73	4.19	3.54	3.61

For each billing period, average daily usage can be calculated by dividing total usage by the number of days in the billing period. For example, there are thirty days in the November 12th – December 11th billing period, so the average daily usage is 111.9 / 30 = 3.73 therms. This value can then be assigned to each day in the billing period. Table 21 shows estimated daily usage for each day in December.[10] Note that the first eleven days reflect the November 12th – December 11th billing period, and the last twenty days reflect the December 12th – January 11th billing period.

Table 21: Redistribute December Billing Data

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 3.73	2 3.73	3 3.73
4 3.73	5 3.73	6 3.73	7 3.73	8 3.73	9 3.73	10 3.73
11 3.73	12 4.19	13 4.19	14 4.19	15 4.19	16 4.19	17 4.19
18 4.19	19 4.19	20 4.19	21 4.19	22 4.19	23 4.19	24 4.19
25 4.19	26 4.19	27 4.19	28 4.19	29 4.19	30 4.19	31 4.19

Summing the estimated daily usage values within each month yields prorated consumption values. This is illustrated in Table 22 for December, January, and February.

Table 22: Calendarized Billing Data

Value	December 2022	January 2023	February 2023
Estimated therm	11(3.73) + 20(4.19) = 124.83	11(4.19) + 20(3.54) = 116.89	11(3.54) + 17(3.61) = 100.31
Average Daily therms	124.83 / 31 = 4.03	116.89 / 31 = 3.77	100.31 / 28 = 3.58

6.1.3 ESTIMATING ANNUAL ENERGY SAVINGS

To calculate program savings, the EcoMetric team employed a Lagged Dependent Variable (LDV) regression model. Equation 1 shows the basic form of the LDV model. The LDV model is estimated exclusively using post-treatment observations but uses the average daily energy consumption from the month of interest prior to treatment (thm_{imy}) as an independent variable.

Equation 1: LDV Model Specification

[10] 2022 calendar is used for this example.

$$thm_{imy} = \beta_0 + \sum_{m=2}^{4}\sum_{y=2024}^{2024}\left(\beta_{my} * I_{my} * thm_{i,m,y-n}\right) + \sum_{m=2}^{4}\sum_{y=2024}^{2024}\left(\tau_{my} * I_{my} * treatment_{imy}\right) + \varepsilon_{imy}$$

Table 23 provides information about the terms in the LDV model specification.

Table 23: LDV Model Definition of Terms

Variable	Definition
thm_{imy}	Customer i's average daily gas usage (therms) in bill month m in year y.
β_0	Intercept of the regression equation.
I_{my}	An indicator variable equal to one for each monthly bill month m, year y, and zero otherwise. This variable captures the effect of each billing period's deviation from the average energy use over the entire time series under investigation.
β_{my}	The coefficient on the bill month m, year y indicator variable.
$thm_{i,m,y-n}$	Average daily therms for customer i in bill month m in the year prior to the assignment to treatment condition. The term n represents the number of years home i has been in the program. This term controls for variability in customer characteristics such as home size and heating fuel.
$\text{treatment}_{\text{imy}}$	The treatment indicator variable. Equal to one when the treatment is in effect for the treatment group. Zero otherwise. Always zero for the control group.
τ_{my}	The estimated treatment effect in therms per day per customer; the main parameter of interest.
ε_{imy}	The error term.

The LDV regression model returns an estimate of the average daily savings per treated household in month m and year y. To compute the aggregate therms savings attributable to HER delivery, we multiply the estimated treatment effect (saved therms per treatment home per day) by the number of days in each month and the number of active households in the treatment group.

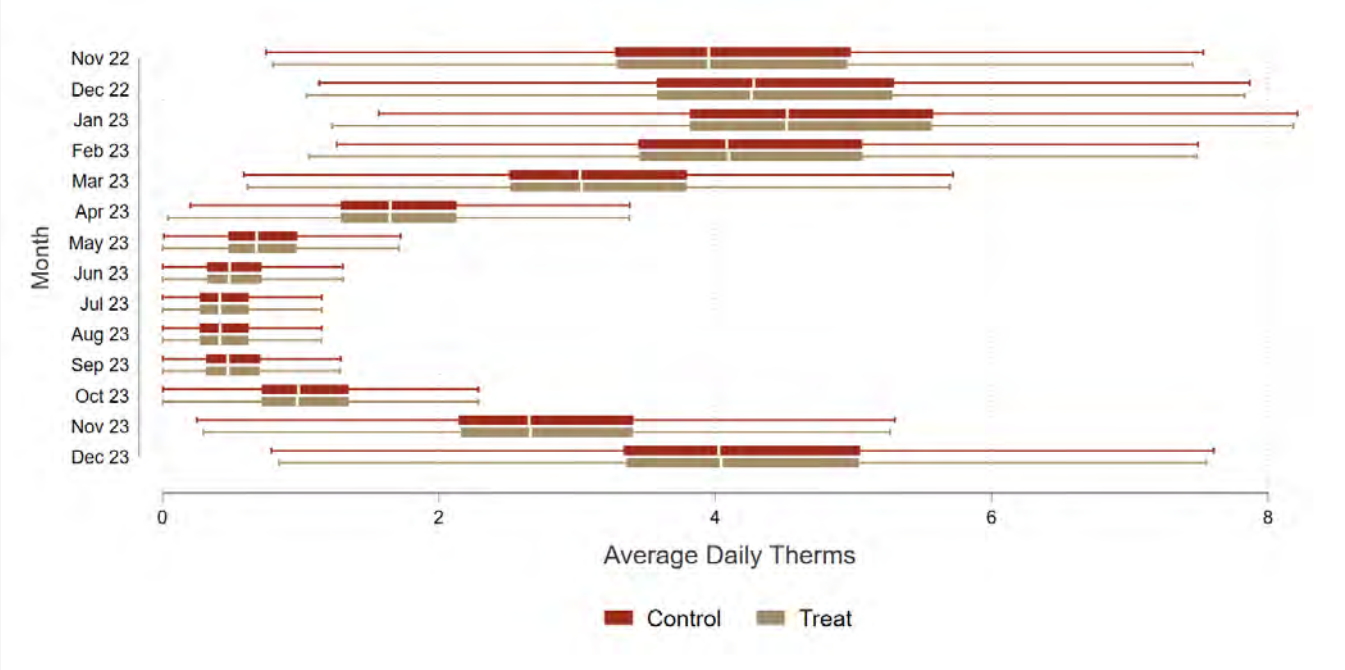
6.2 RESULTS

6.2.1 GROUP EQUIVALENCE

Assuming treatment and control groups consume the same amount of energy *prior* to HER delivery, differences between the groups *after* HER delivery begins can be attributed to the HERs. Thus, one important step in our analysis is to compare pre-treatment consumption in the treatment and control groups. Ideally, average daily consumption is roughly the same between the two experimental groups.

The EcoMetric team assessed pre-treatment equivalence between the treatment and control groups in a few ways. One method was a visual comparison and the others were more scientific. Regarding the visual comparison, Figure 20 compares average daily consumption (pre-treatment) between the treatment and control groups. There appears to be only negligible differences between the control and treatment groups.

Figure 20: Pre-Treatment Equivalences



To corroborate findings from the visual inspection, our team also performed a few scientific comparisons. The first method was a fixed effects regression model that estimates the difference in average daily consumption between the two groups. The second method was a t-test that compares average daily usage between treatment and control. The results of these tests, shown in Table 24,

indicate there are not statistically significant pre-treatment differences between treatment and control groups on average.

Table 24: Pre-Treatment Equivalence Tests on Daily Usage

Wave	Treatment Mean	Control Mean	FE Regression		T-Test P-value[1]
			Treatment Coefficient	P-Value[1]	
January 2024	2.536	2.533	0.003	0.71	0.70

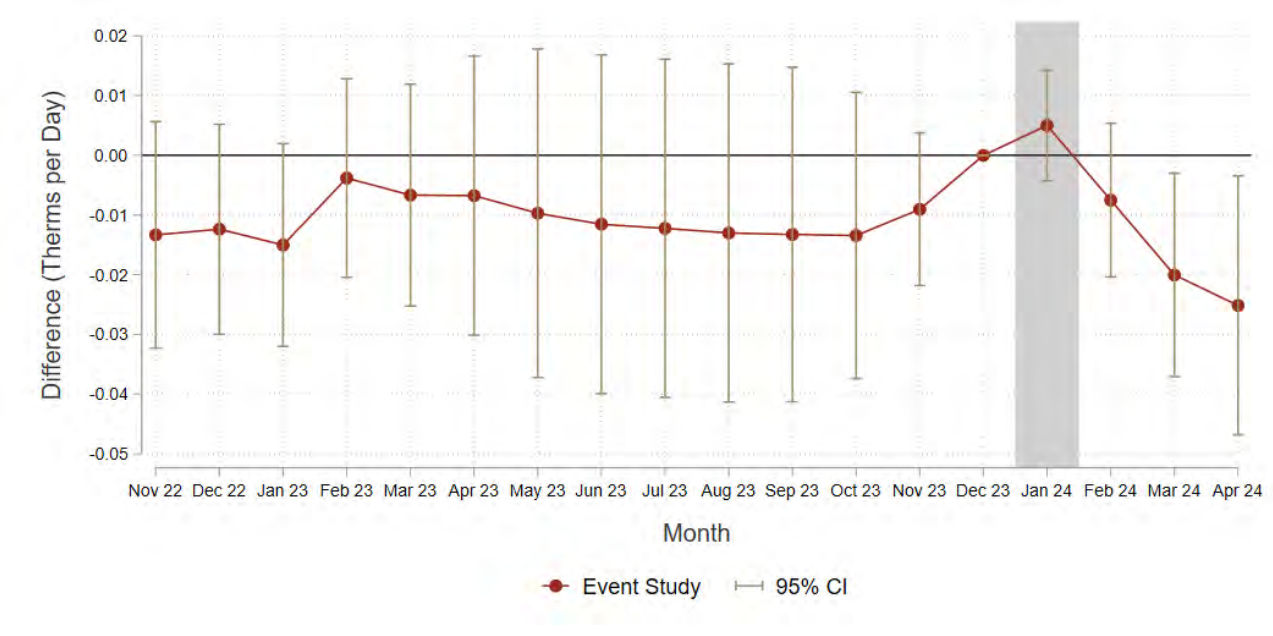
[1] A p-value less than 0.05 indicates the difference between groups is non-trivial (i.e., statistically significant).

We also wanted to make sure that the difference between the treatment and control is stable over time (the parallel trend assumption). To test this, we ran an event study panel regression, where we use customer and year-month level fixed effects and regress the interaction of treatment and year-month on usage. Ideally, we want to see no statistically significant differences in the pre-period months and no noticeable trends in those differences.

By month, Figure 21 displays the results of the event study panel regression. In this figure, the red circles represent the estimated difference between consumption in the treatment and control groups (therms per home per day), and the bands above and below represent the 95% confidence interval. January of 2024 is grayed out to signify that this month reflects both pre-treatment and post-treatment data. Fortunately, all the coefficients in the pre period are not statistically different from zero.

There is a slightly worrying trend in those differences, though, as the differences between groups seem to be changing over time. However, the LDV framework accounts for pre-period differences between treatment cells through the lagged consumption variable.

Figure 21: Event Study Regression – Impact of Being in Treatment Group



6.2.2 ANNUAL ENERGY SAVINGS

Gross therm savings and active treatment counts for each month are shown in Table 25. Treatment customers are considered active through the end of the month that they received their last bill. For example, if a customer received their last bill in March 2024, then they would be counted in February and March 2024, but not in April 2024 (which falls in program year 2024) or any month following. In aggregate, our savings estimate is 61,950 therms.

Table 25: HER Impacts by Month

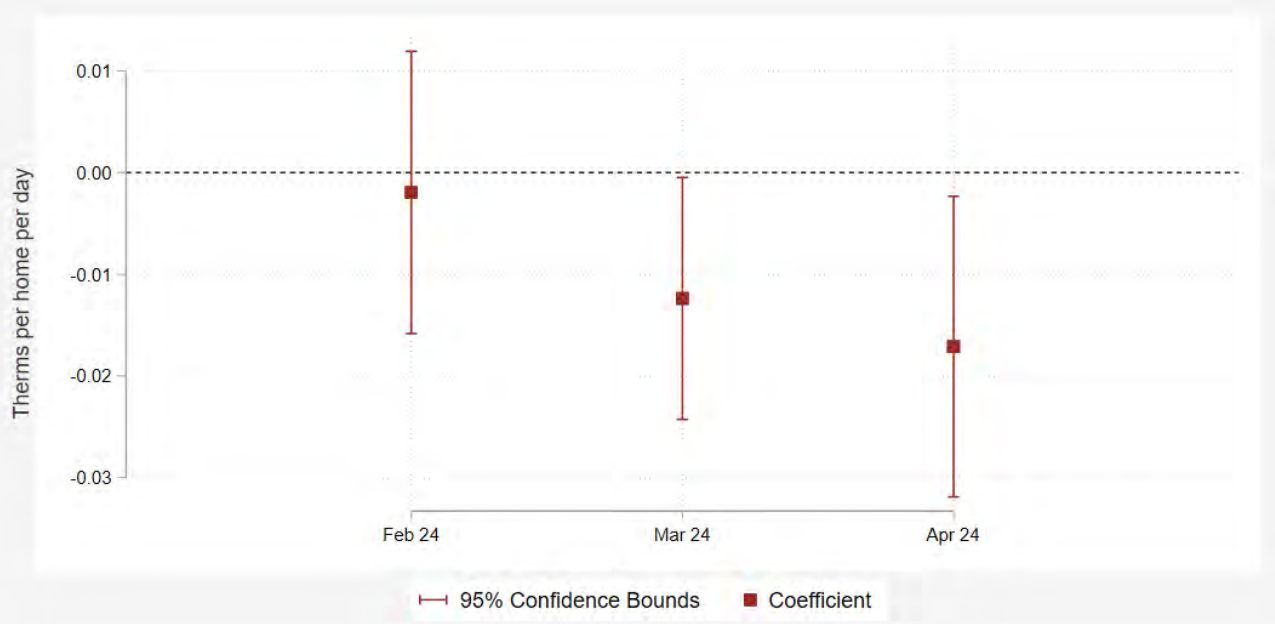
Month	Days	Treatment Count	Savings (Therms)	
			Per Home Per Day	Aggregate
February 2024	29	140,853	0.0020	7,972
March 2024	31	140,699	0.0124*	53,978
PY2023 Total				**61,950**

*Denotes coefficient is significantly different than zero at the 95% confidence level.

Impact estimates by month (therms saved per home per day) can be seen in Figure 22. The red squares represent the estimated difference between consumption in the treatment and control groups (therms saved per home per day), and the bands above and below represent the 95%

confidence interval. The figure also includes April 2024 which will be counted towards program year 2024 savings.

Figure 22: Impacts Estimated by LDV Regression

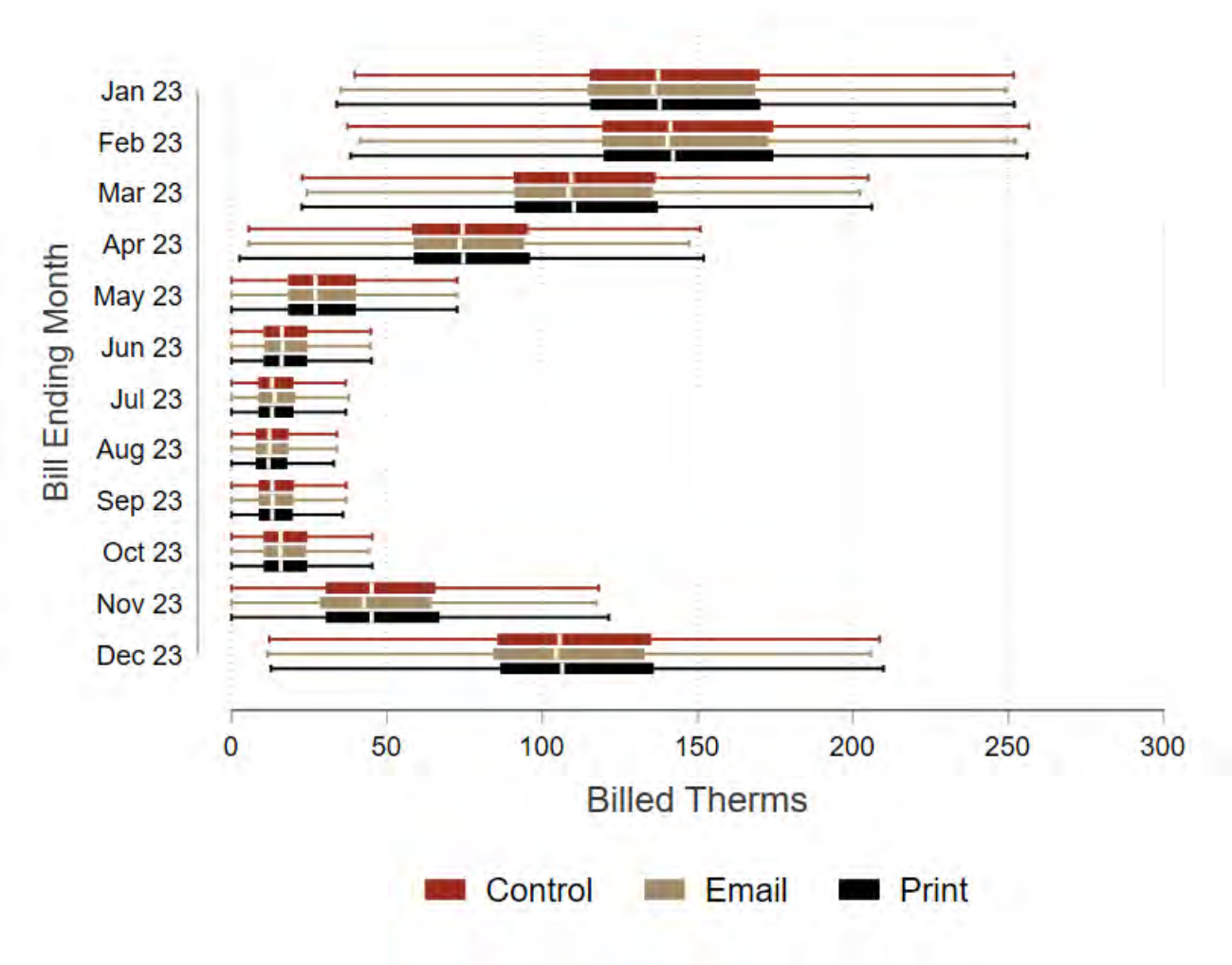


The downward trend in Figure 22 works well with a story of customers who take a few months to adjust their consumption based on the information in a HER, but we do not expect the downward trajectory to continue indefinitely. First, natural gas consumption is lower in the summer, so there will be fewer opportunities to conserve gas among the treated. Second, this pattern is based off only three months of data.

6.2.3 DELIVERY MODE

Approximately 29% of treatment group homes were treated via email, and the rest were treated via delivery mail. We attempted to determine if the delivery modes have different effects, but there are not valid controls to make the comparisons. Looking at the distribution of usage by treatment group and subgroup (control, treated by print, treated by email) in Figure 23 shows a potential problem.

Figure 23: Usage by Control and Treatment Type



While control, email treat, and print treat are all very similar in the summer, the email group has lower usage in the winter than the print group. When combined, the treatment subgroups are quite similar to the control group. However, it seems there is something fundamentally different between the homes in the two treatment subgroups (likely, those who have an email on file with NMGC are different in some other way than those that don't). We do not have the information necessary to identify who in the control group also self-selected into email billing (or, more generally, who would receive HERs via email had they been randomized to the treatment group). If we were to use the full control group as controls for both treatment modes separately, we would be using control groups that are unlike the treatment. Improving the labeling of control groups in the future may allow us to examine the variation in treatment effect by treatment delivery mode.

6.3 FINDINGS AND RECOMMENDATIONS

The evaluation team offers the following observations:

- Verified savings for the Home Energy Reports program for PY2023 were 61,950 therms. We'd expect more savings in future program years, as treatment was only active for two months during PY2023.
- If NMGC is interested in the relative effectiveness of the print and email treatment, separate control groups should be identified by providing the billing method of the control. (Presumably, billing method was used to determine delivery mode in the treatment group.)
- We suspect that some of the trends in the pre period may be caused by the fact that the control group (10,000) was so small compared to the treatment group (140,000).

7 NEW HOMES

7.1 NEW HOMES GROSS IMPACTS

The ex ante PY2023 impacts for the New Homes program are summarized in Table 26. In total, the New Homes program accounted for 14 percent of the ex ante energy impacts in NMGC's overall portfolio.

Table 26: PY2023 Water Heating Ex Ante Savings Summary

Measure Category	#of Projects	Expected Gross Therms Savings
NMGC Performance Incentive	1,250	420,606
NMGC Energy Star Boilers - 95% AFUE New Construction	17	4,908
NMGC Prescriptive Measures	541	55,129
Total	**1,808**	**480,643**

The majority of the gross impact evaluation activities were devoted to engineering desk reviews of a sample of projects. The sample was stratified to cover several measure types so that no single measure would dominate the desk reviews. The final sample design is shown in Table 27.

Table 27: PY2023 Water Heating Desk Review Sample

Measure Group	Count	Average Therms	Total Therms	% of Savings	Final Sample
NMGC Performance Incentive	1,250	337	420,606	87.51	8
NMGC Energy Star Boilers - 95% AFUE New Construction	17	289	4,908	1.02	0
NMGC Prescriptive Measures	541	102	55,129	11.70	2
Totals	**1,808**		**480,643**	**100**	**10**

Savings for the performance homes New Homes program are quantified using savings algorithms listed in the New Mexico TRM. For these projects, the evaluation team confirmed the baseline efficiency and other key parameters used by the implementation team and the efficient equipment ratings using the provided AHRI documents for water heaters, furnaces etc.

The resulting engineering adjustment factor for the New Homes program is 1.0000.

7.2 PROCESS EVALUATION

The evaluation team recruited participants from the list of New Homes program builders that had valid contact information. The evaluation team conducted interviews with five New Homes Program builders. These contacts were from a pool of 26 potential builders for whom valid contact data were available and all of whom had interacted with the PY2023 New Homes Program. For this evaluation round, the interviews covered the following topics:

- Builder background
- Program awareness and engagement
- Program process and market response
- Free ridership-related questions
- Program satisfaction

This section primarily presents results qualitatively to show the range of perceptions and responses, but some quantitative results are featured to provide further context on the frequency of types of responses.

7.2.1 BUILDER BACKGROUND

Five interviews were conducted with representatives of builders who played a significant role in their organization's participation in the program and specialize in residential home construction. All five builders confirmed their participation in the New Homes Program and had completed a variety of new construction projects. These projects included the installation of equipment eligible for rebates through the New Homes Program.

7.2.2 PROGRAM AWARENESS AND ENGAGEMENT

The evaluation team asked the builders to describe how they first learned about the New Homes Program, as well as to elaborate on their experience with the program process. Two of the builders were already familiar with the program, one other builder heard of the program through the local builders association, while two couldn't recall.

All the builders reported no barriers to participating in the program. They unanimously agreed that the program has been easy to work with and that program representatives have been helpful. Additionally, the builders mentioned that the program requirements were communicated very clearly, with helpful support available for any needed clarification.

All five of the builders highlighted the value of the rebates, noting that these incentives enabled them to construct more energy-efficient homes while also delivering savings to homeowners. They

emphasized affordability, with the incentive playing a crucial role in their ability to market competitively priced homes that offer increased energy efficiency. One builder mentioned, "It helps a lot. We always try to get as many rebates as we can. It helps save money for buyers. We use the rebates as incentives for buyers; when we sell the houses, we offer incentives to help cover costs, though we don't specify this to buyers."

Another builder shared their strategy of maximizing rebates to keep homes affordable for their customers while maintaining high energy efficiency standards. One builder specifically appreciated the role of the third-party implementor, which they said added significant value beyond the financial incentives of the program. The builder valued the implementor's involvement in providing verification of the energy efficiency improvements via Home Energy Rating System (HERS) assessments.

The builders were divided on how the program influenced their equipment selection decisions. Three builders felt that the incentives directly influenced their choice of equipment. While two builders indicated that the program did not significantly influence their decisions, as they already strive to meet a wide range of energy codes and efficiency standards. These builders often exceed current energy efficiency requirements and push the envelope on energy efficiency.

One of the two builders mentioned above believed that their high standards for energy efficiency surpassed the direct influence of the program on equipment choices; they acknowledged the program's value in providing training, technical assistance, and resources. They said program support has complemented their commitment to building energy-efficient homes, enhancing their capability to achieve and exceed their energy efficiency goals.

7.2.3 PROGRAM PROCESS AND MARKET RESPONSE

The evaluation team asked the builders a series of questions about why they chose to participate in the New Homes Program. All the builders mentioned the simplicity of participating in the program and low administrative burden. One respondent said they all use a third-party rater service that helps with the paperwork involved.

All the builders stated that they do not mention the rebates to customers during the home buying process. Instead, they focus on highlighting the energy efficiency upgrades made to the homes as part of the program. The builders expressed that these improvements add significant value to their sales and marketing messages. One builder appreciated the ability to inform customers that a third party conducts an audit of the home, assigning a performance HERS rating, which they can use in their discussions.

When the evaluation team asked the builders for their views on the program's impact on the market demand for energy-efficient equipment, their opinions were mixed. Two builders noted an increase in feedback from buyers concerned with energy efficiency. One of these builders attributed the recent energy code changes to consumer demand, interpreting the extensive public commentary on these changes as a sign of heightened interest in energy efficiency. Another builder felt that the program itself influences the choice of equipment, but questioned its overall effect on market demand, noting that many consumers still prefer more affordable options.

7.2.4 PROGRAM SATISFACTION

The evaluation team asked the builders to quantify their level of satisfaction with the program. Builders were asked to rate their satisfaction on a scale of 1 to 5, with 1 being "not at all satisfied" and 5 being "very satisfied." Builders could also indicate if they were particularly satisfied or dissatisfied with anything specific. They could also indicate if their customers were satisfied.

Overall, the builders expressed a high level of satisfaction with the program. Four of the builders rated the program a 5 ("very satisfied"). However, one builder's opinion varied significantly over time; they rated their satisfaction as 5 ("very satisfied") in the previous year but dropped to a 1 ("not at all satisfied") this year, primarily due to dissatisfaction with recent code changes. Despite this, the builder had previously expressed high satisfaction, citing benefits such as strong support, valuable educational resources, and attractive rebates. When it came to their customers' perspectives, four of the builders rated the program a 5 ("very satisfied"), and one did not provide a customer rating.

Given the relatively high level of satisfaction, the builders did not share any direct suggestions for improving the program. One builder said that the program ultimately lowers the cost of the house for their customers. Another builder mentioned that there were times when they received a rebate when it was not even expected, so they were very happy. One builder even shared that they have been learning more about how to save energy because of the program. The last builder had been very satisfied with the program, except for the recent code changes.

7.3 NEW HOMES NET IMPACTS

Beginning in 2021, the impact evaluation moved to applying new net-to-gross (NTG) ratios prospectively in future years, rather than retrospectively as had been done in prior years. The PY2022 NTG ratios are being applied to the PY2023 results. The NTG ratios calculated in PY2023 will then be applied to the PY2024 results.

For the New Homes program, the self-report responses from the statewide interviews of participating builders conducted in PY2020 were used to calculate a free ridership rate and determine net impacts. The final realized gross and net impacts are shown in Table 28.

Table 28: PY2023 Water Heating Net Impact Summary

Program	#of Projects	Realized Gross Savings	NTG Ratio	Realized Net Savings
New Homes	1,338	480,643	0.7333	352,456

In PY2023, for the net impact self-report analysis, the evaluation team was able to complete interviews with five of the twenty-six builders that had valid contact data. Based on the self-approach method described earlier, we calculated a free-ridership rate of 0.325 that resulted in an overall net-to-gross ratio of 0.675.

The current net-to-gross ratio is 0.7333 for this program, which was calculated by the evaluation team in PY2020. The net-to-gross ratio for the similar new home construction program with one contractor interview by PNM is 0.725 for PY2024. Given that the new value of 0.675 is based on two responses, we have averaged the net-to-gross values from the three respondents to get a final net-to-gross ratio of 0.6917 for the NMGC New Homes Program. This new value will be applied to the program beginning in PY2024.

8 COST EFFECTIVENESS RESULTS

The evaluation team calculated cost effectiveness using the Utility Cost Test (UCT) for each individual NMGC energy efficiency program, as well as the cost effectiveness of the entire portfolio of programs.[11] The evaluation team conducted these tests in a manner consistent with the California Energy Efficiency Policy Manual.[12]

Cost effectiveness tests compare relative benefits and costs from different perspectives. The specific cost effectiveness test used in this evaluation, the UCT, compares the benefits and costs to the utility or program administrator implementing the program. The UCT explicitly accounts for the benefits and costs shown in Table 29.

Table 29: Utility Cost Test Benefits and Costs

Benefits	Costs
• Utility avoided energy-related costs	• Program overhead/ administrative costs
• Utility avoided capacity-related costs, including generation, transmission, and distribution	• Utility incentive costs • Utility installation costs

Using net realized savings from this evaluation and cost information provided by NMGC, the evaluation team calculated the ratio of benefits to costs for each of NMGC's programs and for the portfolio overall. The results of the UCT are shown below in Table 30. The portfolio overall was found to have a UCT ratio of 1.63.

11 The Utility Cost Test is sometimes referred to as the Program Administrator Cost Test, or PACT.
12 California Public Utilities Commission. 2020. California Energy Efficiency Policy Manual – Version 6. https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/e/6442465683-eepolicymanualrevised-march-20-2020-b.pdf

Table 30: PY2023 Cost Effectiveness

Program	Utility Cost Test (UCT)
Income Qualified	0.90
Efficient Buildings	2.25
Multifamily	1.45
New Homes	2.60
ENERGY STAR Water Heating	1.65
ENERGY STAR Space Heating	1.40
Home Energy Reports	0.10
Overall Portfolio	**1.63**

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF NEW MEXICO GAS COMPANY, INC. FOR APPROVAL OF ITS 2023-2025 ENERGY EFFICIENCY PROGRAM PURSUANT TO THE NEW MEXICO PUBLIC UTILITY AND ENERGY EFFICIENCY ACTS	)))))))	**Case No. 22-00232-UT**

CERTIFICATE OF SERVICE

I CERTIFY that on this date I sent, via email, to the parties and individuals listed below, a true and correct copy of **New Mexico Gas Company, Inc.'s 2023 Energy Efficiency Program Annual Report:**

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DATED this June 26, 2024

Respectfully submitted,

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