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October 18, 2024

VIA EMAIL

Secretary Rosemary Chiavetta
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**Re: Pennsylvania Public Utility Commission, et al. v. National Fuel Gas Distribution Corporation
Docket Nos. R-2022-3035730, et al.**

**National Fuel Gas Distribution Corporation's Universal Service and Energy Conservation Plan for 2022-2023 Submitted in Compliance with 52 Pa. Code § 62.4
Docket No. M-2021-3024935**

Dear Secretary Chiavetta:

Enclosed please find a copy of National Fuel Gas Distribution's ("Distribution" or "Company") LIURP Evaluation Report. This report is being filed pursuant to Paragraph 54(b) of the Settlement in the Company's last base rate proceeding at Docket No. R-2022-3035730. The Company is also filing a copy of this report at its Universal Service and Energy Conservation Plan Docket No, M-2021-3024935.

Respectfully submitted,



Anthony D. Kanagy

ADK/dmc
Enclosure

cc: The Honorable Mary D. Long (*via email; w/attachments*)

ALLENTOWN HARRISBURG LANCASTER MOUNT LAUREL PHILADELPHIA PITTSBURGH WASHINGTON, D.C. WILMINGTON

A PENNSYLVANIA PROFESSIONAL CORPORATION

Secretary Rosemary Chiavetta
October 18, 2024
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Certificate of Service

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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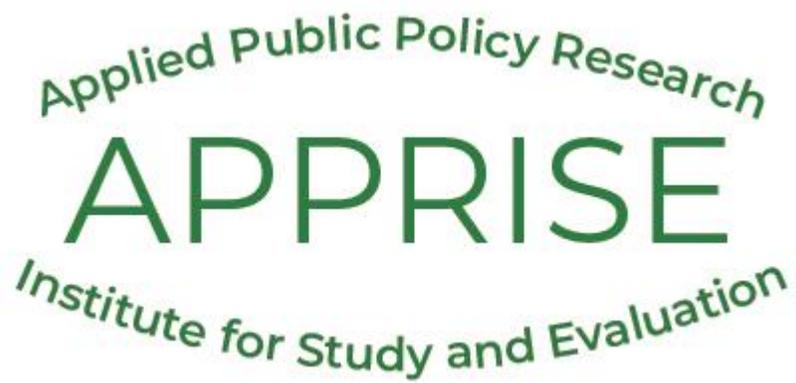
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Date: October 18, 2024



Anthony D. Kanagy



**National Fuel Gas
LIURP Evaluation
Final Report**

September 2024

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Executive Summary

National Fuel Gas Distribution Corporation (NFG) has a Low-Income Usage Reduction Program (LIURP) that is designed to help low-income customers reduce their natural gas usage and their natural gas bills. It is offered per NFG’s 2022-2026 Universal Services and Energy Conservation Plan, approved by the Pennsylvania Public Utility Commission (PUC) at Docket No. M-2021-3024935 (Plan). NFG was directed by the Pennsylvania Public Utilities Commission to “...commission an independent third-party LIURP evaluation and needs assessment to help identify additional areas for improvement in the delivery and reach of its LIURP services.” This report was prepared in connection with NFG’s Rate Case Settlement at PUC Docket No. R-2022-3035730. It presents information resulting from the evaluation, including a description of the research conducted, the findings from that research, and recommendations for NFG to increase LIURP participation.

NFG has also retired its longstanding LIRA Program (a rate discount program) and implemented a new customer assistance program named “CAP” (a percentage of income program) in April 2024.

Low-Income Usage Reduction Program

NFG’s LIURP provides no-cost information and home improvements to high-usage low-income customers to reduce energy usage and energy bills.

NFG’s LIURP has three components.

1. Low-Income Usage Reduction Program (LIURP): LIURP aims to reduce low-income customers’ energy usage and bills.
2. Low-Consumption LIURP (LC-LIURP): NFG received temporary approval in 2020 for this pilot to assist customers in smaller homes with annual natural gas usage of 900 or more ccf and less than 1,300 ccf. In 2023, NFG received approval to expand eligibility criteria for LC-LIURP and extend the length of LC-LIURP as a Pilot through the end of NFG’s current Plan.
3. Emergency Repair and Replacement Program (ERRP): ERRP assists low-income customers with gas heating and hot water heating equipment emergency repairs or replacement.

NFG’s LIURP is managed by NFG with the support of Community Based Organizations (CBOs) and one private contractor. These organizations perform the audits and measure installations. NFG has worked to add more LIURP providers to help meet their goals but has faced challenges because of their insurance requirements and because potential contractors often do not have blower door testing equipment.

Table ES-1 displays LIURP participation. Projected participation is the estimated maximum number of jobs that would expend all LIURP funds.

**Table ES-1
LIURP Participation**

Program	Participation							
	Actual				Projected			
	2020	2021	2022	2023	2024	2025	2026	2027
LIURP	125	77	93	78	86	83	80	77
LC-LIURP	5	6	28	5	148	143	137	132
ERRP	115	90	106	124	79	75	70	66
Total	245	173	227	207	313	301	287	275

Table ES-2 displays LIURP savings as reported in the annual evaluations from 2019 through 2022. Average percent savings ranged from 13.6 percent for 2020 jobs (likely lower because of the pandemic) to 21.9 percent in 2022. These savings, even those from 2020, are high compared to other LIURP programs that APPRISE has evaluated. This is likely related to the enforced criteria for pre-treatment usage.

**Table ES-2
Annual LIURP Gas Savings**

Year	# Jobs	MCF			% Saved
		Pre-Usage	Post-Usage	Gas Savings	
2019	123	180.9	145.7	35.2	19.5%
2020	77	187.1	161.7	25.4	13.6%
2021	93	209.5	173.0	36.5	17.4%
2022	78	202.0	157.8	44.2	21.9%

Table ES-3 displays LC-LIURP savings reported by NFG for 39 of the 44 completed jobs. Other than lower average savings for the 2023 jobs, savings for these jobs were also relatively high, ranging from 16.9 percent in 2022 to 19.4 percent in 2020. Across all LC-LIURP jobs, average annual savings were 22.9 MCF per home or about 16 percent of pre-treatment usage.

Table ES-3
Annual LC-LIURP Gas Savings

Year	# Jobs	Pre-Usage	Post-Usage	Gas Savings	% Saved
		MCF			
2020	3	131.9	106.3	25.6	19.4%
2021	6	136.7	112.3	24.4	17.8%
2022	26	146.6	121.8	24.8	16.9%
2023	4	140.3	134.1	6.2	4.4%
All Jobs	39	143.3	120.4	22.9	15.9%

The greatest challenge that NFG has faced in their LIURP is in serving the targeted number of customers and expending their allocated budget. NFG has taken several steps to increase participation and continues to actively work for further improvement.

Needs Assessment

We analyzed the 2022 American Community Survey (ACS) data to provide NFG with an updated estimate of the number of customers in their service territory at various poverty levels by county and with information on their characteristics. Key findings from this analysis are summarized below.

- **Household Poverty Level:** NFG’s service territory has about the same concentration of low-income households as the rest of the state. Eighteen percent of households in NFG’s service territory have income below 150 percent of the FPL and ten percent have income between 151 and 200 percent of the FPL. These households (combined) are eligible for LIURP services.
- **Vulnerable Households:** Households were identified as vulnerable if they had at least one member who was disabled, younger than six, or 65 years of age or older. About 59 percent of the households in NFG’s service territory have a vulnerable member, compared to 55 percent outside of NFG’s service territory. These households are most vulnerable to extreme temperatures and can achieve important health and safety benefits through weatherization.
- **Household Language:** NFG has proportionally more English-speaking households than Pennsylvania as a whole. While 96 percent of the households in NFG’s service territory have English as their primary language, 85 percent outside of NFG’s service territory have English as their primary language. This makes it easier for NFG to provide LIURP services to their customers.
- **Home Ownership:** Overall, 78 percent of households in NFG’s service territory own their homes and 52 percent below 150 percent of the FPL own their homes. Renters are typically more difficult to serve, as landlord permission is required for service delivery.

- **Housing Type:** Single-family detached homes are much more common in NFG territory compared to the rest of Pennsylvania. While 82 percent of households in NFG's service territory live in single-family homes, 58 percent outside of NFG's service territory live in single-family homes. Even among households at or below 150 percent of the FPL, 63 percent live in single-family homes, another factor that makes NFG's customers more readily served by LIURP.
- **Energy Burden:** Households at or below 150 percent of the FPL within NFG's service territory who heat with natural gas have a mean group energy burden of 7.5 percent, compared to a mean group energy burden of 3.8 percent for those between 151 and 200 percent of the poverty level. Reducing their energy usage and costs can help to alleviate these high energy burdens.

LIURP Provider Research

APPRISE conducted in-depth telephone interviews with five CBOs and one independent contractor that provided Low-Income Usage Reduction Program (LIURP) services to National Fuel Gas customers. Key findings from these interviews are summarized below.

- **Staffing Challenges:** Four of the six providers expressed the need for additional staff members to help them provide NFG LIURP services. Three were actively searching for qualified candidates but faced challenges including finding qualified candidates, lack of response, background check failures, and drug screening failures.
- **LIURP Outreach:** All six agencies used phone calls and letters or postcards to reach out to customers. At minimum, two phone calls and one letter were used. Three agencies made home visits on occasion and two agencies distributed flyers and left door hangers.

One interviewee noted that the agency's letter received a better response than NFG's letter since the agency provides more detailed information about the program and the measures it can provide.

NFG began calling customers at the end of 2023 to let them know about LIURP prior to sending their information to the contractors. Three of the six agencies noticed a positive impact from NFG calling customers before sending referrals out to the agencies.

- **LIURP Service Delivery Goals:** Five of the six providers completed fewer jobs than planned. All five agencies attributed the challenge to their own internal staffing issues. The following specifics were noted.
 - Need for additional staff members
 - Staff transition within the agency
 - Delays by NFG furnace clean and tune subcontractors
 - Customer refusals
 - Major barriers that caused deferrals
- **LIURP Service Delivery Challenges:** When asked about barriers to serving more customers, service providers discussed the following key issues.

- Customer Outreach: Service providers noted that customer awareness is low, customers do not respond to outreach, refusals are very common, and that customers are skeptical of the program.
- Time Commitments: Service providers said that they had to prioritize WAP because they need to spend their allocated funds to continue receiving funding from the State. State WAP goals increased in 2023 and impacted their ability to do other programs.
- Budgetary Difficulties: One service provider said that increasing prices caused a challenge. The service provider stated that they depleted their NFG LIURP budget toward the end of the last three-year cycle, however they received extra funds from NFG to complete jobs.
- NFG Clean and Tune Work Delays: One service provider mentioned delays in the clean and tune work. (NFG notes that this was addressed with the agency that was experiencing delays, and the issue has been resolved.)
- Recommendations to Increase LIURP Participation: Service providers recommended methods for NFG to increase LIURP participation.
 - Improved Marketing: Providers discussed the use of pamphlets, email blasts, adding information to NFG's letters on the measures provided by the program, and giving the providers customers' emails so that they could send information about LIURP and the types of measures they can install. (NFG notes that they have significantly increased their outreach efforts over the past two to three years.)
 - Renters: Contact landlords for approval. Emphasize to customers that renters are eligible for the program with the approval of their landlords since the letter mailed by NFG does not specify this.
 - Mobile Homes: Provide services to mobile home occupants.
 - Gas Usage Requirements: Lower the gas usage requirements. (NFG has lowered the consumption threshold from 1,300 ccf annually to 900 ccf through the implementation of their LC-LIURP Pilot.)
- Barriers to LIURP Measure Installation: Providers discussed the following challenges.
 - Mold and Moisture: Five of the six providers stated that mold and moisture were issues in customers' homes from 25 to 75 percent of the time. Two said that the agency does not address these issues. One said that they are unsure of NFG's guidelines regarding mold and moisture issues and the other service provider said that they ask the customer to remediate such issues. Three of the six agencies install vents, bath fans, and vapor barriers to alleviate moisture issues. (NFG notes that they review these procedures periodically and that all providers should know that if areas with mold and moisture can be eliminated from the building envelope, they can proceed with weatherization in other areas.)
 - Knob and Tube Wiring: Five of the six providers said this was an issue ranging from ten to 60 percent of the jobs they see. One service provider said that they resolve Knob and Tube wiring barriers by coordinating with other utilities or State Weatherization.
 - Asbestos: Only one provider said this was a frequent issue seen in 20 to 30 percent of homes.
 - Inaccessible Attics: This was an infrequent issue for the providers.

- NFG Data: As compared to these provider remarks, NFG's cancellation and deferral data show rates for all health and safety issues are much lower ranging from four percent in 2021 and 2023 to ten percent in 2022 over the four-year period from 2021 to 2024.

Two of the six agencies coordinate services with other programs or utilities such as Penn Power, Penelec, WAP, or Department of Energy Work Ready Program to help address the health and safety concerns in customers' homes. One agency said that they do not install any measures since most health and safety issues are beyond the scope of the program and there is a lack of set standards. (NFG notes that they review health and safety protocols periodically and have a set health and safety budget.)

Two of the agencies said that they were unsatisfied with NFG's budget for repairs and health and safety since it is inadequate for issues they see on a regular basis. (NFG notes that no contractors expressed concern when NFG asked whether they had any issues with their health and safety and incidental repair budgets.)

- Missed Opportunities: Five agencies stated that air sealing and insulation often becomes a missed opportunity because of health and safety barriers.
- Program Coordination: Five of the six service providers stated that they coordinate jobs with the State Weatherization Assistance Program, four coordinate with Penelec LIURP, and two coordinate with Penn Power LIURP.

Barriers to coordination include eligibility differences, the WAP waiting list, lack of access to NFG usage data, WAP requirements for 15 years before returning to the customer's home, additional paperwork, and electric and gas accounts in different names. (NFG notes that when contacted, usage data is provided immediately with customer consent.)

- NFG Support: Five of the six providers expressed satisfaction with the support provided by NFG. Additional support requested included additional guidelines or procedures, NFG customer service training, service provider IDs, shorter payment terms, electronic access to customer data, and an improved email system. (NFG notes that they provide customer service training multiple times per year, and that secure emails can be used to share data with customer consent. NFG is also exploring additional options for secure data sharing.)
- LIURP Opportunities: Service providers made recommendations for how NFG can serve more customers in the program.
 - Marketing: Increase marketing through social media, bill inserts, brochure distribution, messaging, email blasts, and billboards.
 - CAP Participants: Mandate LIURP participation for CAP customers. (NFG notes that they are attempting to increase participation in CAP and that mandating LIURP participation would be counterproductive.)
 - Program Guidelines: Lower usage requirements and serve mobile homes.

LIURP Participant and Nonparticipant Research

APPRISE conducted mixed mode web/telephone surveys with 114 LIURP participants and 226 nonparticipant customers who were recruited for LIURP but did not respond to outreach. This section provides a summary of the findings and recommendations from this research.

- **Nonparticipant Demographics:** The results for the surveyed nonparticipants were consistent with the needs assessment findings. Customers are likely to speak English and live in single-family homes that they own. These characteristics make it easier to serve these households with LIURP, so additional marketing and awareness efforts have the potential to positively impact LIURP participation among the targeted customers.
- **Nonparticipation Reasons:** Most nonparticipants had not heard of LIURP or did not understand the services provided by the program, and most nonparticipation reasons related to this lack of LIURP knowledge or understanding. This suggests that additional marketing and outreach is needed.
- **LIURP Challenges:** Only 14 percent of customers experienced challenges with the program and 94 percent were very or somewhat satisfied with the program. The most common challenge reported was the work quality, cited by eight percent of participants. Additional training and quality control could be warranted if complaints are more common in a subset of the providers. (NFG notes that NFG has not experienced any customer complaints about the LIURP process or contractors over the last several years and that any complaints will be investigated and addressed immediately.)
- **Nonparticipant Need:** Nonparticipants reported several areas where LIURP could potentially improve their home safety and comfort. Potential benefits including a reduction in noise, improved air quality, reduced draft, and a reduction in unsafe or unhealthy temperatures should be highlighted when conducting LIURP outreach.
- **LIURP Impacts:** Participants reported that their gas bills declined; they noticed improvements in their home comfort, air quality, and home temperature; and their homes were less drafty. These benefits should be highlighted when marketing LIURP. Participant testimonials, including videos, could be a beneficial marketing tool.
- **LIURP Satisfaction:** High customer satisfaction and positive comments from customers show that the program is working for participants. This information can be leveraged in outreach efforts.

Findings and Recommendations

This section provides a summary of findings and recommendations and a road map for increasing LIURP participation and budget utilization.

The research found that the average percent savings on LIURP jobs ranged from 13.6 percent for 2020 jobs (likely lower because of the pandemic) to 21.9 percent in 2022. These savings, even

those from 2020, are high compared to other Pennsylvania LIURP programs that APPRISE has evaluated. This is likely related to the enforced criteria for high pre-treatment usage.

Additionally, LC-LIURP annual savings reported by NFG averaged 22.9 MCF per home or 16 percent of pre-treatment usage. Even these savings are high compared to other PA LIURP programs.

NFG's LIURP program is performing very well, and the key challenge they face is increasing participation. Therefore, the rest of this section focuses on findings and recommendations related to increased participation.

1. NFG has undertaken extensive efforts to increase LIURP participation.

NFG reported that they have undertaken the following efforts to improve LIURP participation.

- **Improved Outreach Materials:** NFG developed new materials in 2023 to provide information on LIURP. This includes a LIURP features sheet and a Frequently Asked Questions (FAQ) sheet.
- **LIURP Outreach Phone Calls:** NFG began calling customers at the end of 2023 to inform them about LIURP prior to sending the customers' information to the service delivery providers. Prior to these calls, NFG would send an informational LIURP letter to the customer informing them of the program at the same time that they sent the referral to the service delivery organization. The letter from NFG informed the customer that they would be contacted by the particular organization.

At the time of this research, it was too early to assess how much of an impact these calls had on customer participation. However, NFG perceives that they have had a very positive impact on customer acceptance of services, and three of the six service providers reported a positive impact from NFG calling customers before sending referrals out to the agencies.

- **Increased Health & Safety and Repair Allowances:** NFG increased the amount that providers were permitted to spend on services to enable weatherization measures to be installed.

NFG's allowance is \$500 for initial pre-approved contractor spending that meets the health and safety guidelines. On a case-by-case basis, NFG approves up to \$1,000 prior to the start of the work that will enable weatherization to proceed.

The incidental repairs allowance is up to \$100 pre-approved, and up to \$200 on a case-by-case basis for repairs that are needed to complete the home's weatherization. These repairs include work such as window repair, venting/pipe issues, and chimney repair.

- **Landlord Approval:** NFG has worked to reduce the burden of the approval form and has been networking with landlord/apartment associations in their service territory to increase program awareness.

- **Additional Service Delivery Providers:** NFG brought on an additional agency and an additional private contractor and continues to work to recruit more contractors.

NFG has worked to recruit additional providers with newspaper advertisements, Google searches, by word of mouth, and by asking staff to reach out to their contacts, but most of these efforts have not been successful. In 2024, NFG partnered with a new private contractor and a new agency that does work with the local electric utility and is aiming to coordinate more weatherization jobs.

- **Provider Compensation:** NFG initiated contractor payments of \$150 for no-show customers to incentivize contractors to reach out to customers. This provides compensation for their outreach efforts, time, and expenses associated with scheduling and attempting to complete the weatherization jobs.
- **Expanded Eligibility:** NFG initiated the LC-LIURP to expand the pool of customers who are eligible for program services to those with annual natural gas usage of 900 to 1,299 ccf, and this Pilot was approved through the end of the current Plan.
- **NFG Staff Training:** NFG expanded their staff training to increase NFG program awareness among all staff members who interact with customers. Staff who are more aware of the benefits and requirements of the program are more capable of convincing customers to accept LIURP services and other programs.

NFG call center representatives make referrals for customers who have bill payment problems or express an interest in weatherization. The call center representatives have been trained and also receive refresher training for special programs. NFG includes special programs in Collections training in the spring and a High Bill training in the fall. The program-focused training is provided to all new hires and is repeated once a year.

More in-depth training was provided in 2024 to continue improving awareness and understanding of all programs that NFG offers with a goal of receiving more LIURP referrals from the call center representatives and increasing participation in all programs. This training included more detailed information on their Universal Service Programs, including LIURP. NFG received good feedback from the representatives and noticed an uptick in the referral rate after this training. This program-focused training is provided to all new hires and is repeated annually.

- **Provider Meetings:** NFG holds annual contractor meetings to improve consistency and communication about LIURP, share best practices, set goals and expectations, and answer questions. They expect that these meetings will lead to an increase in the number of LIURP jobs completed.
- **General Outreach:** NFG increased outreach to customers and community partners.

NFG tracks low-income customers by collecting income provided during payment arrangements, Customer Assistance Program (CAP) participation, Neighbor for Neighbor

recipients, LIURP participation, and LIHEAP recipients. Customers at or below 200 percent of the FPL that meet the consumption threshold are reviewed for LIURP.

LIURP is part of NFG outreach during events that NFG attends. Materials include assistance program brochures, LIURP features sheets, LIURP FAQ sheets, Energy Tips sheet, and energy conservation kits (which contain energy conservation/weatherization materials such as sealant foam, switch plates, weather stripping and window insulation shrink kit). The outreach events/efforts include but are not limited to the following.

- Tables during school family resource fairs.
- Legislator education and agency training.
- Senior fairs and community events.
- Landlord/Apartment Association events
- Universal Service Advisory Committee meetings (USAC)
- Networking events
- Distribution of brochures at local agencies
- Bill inserts/newsletters

More information can be found in NFG's Customer Education and Outreach Plan.

2. NFG is Planning for Additional Efforts to Increase LIURP Participation

NFG reported that they are planning for the following additional efforts to improve LIURP participation.

- **CAP Participation:** While CAP participants are required to participate in LIURP, the requirement is not currently enforced. NFG is actively working to increase CAP participation, so enforcing the LIURP participation requirement could be counterproductive for CAP. However, consistent with their plan, NFG has plans to send CAP participants a letter reminding them that CAP requires participation in LIURP if eligible to do so. This is increasingly important as NFG recently transitioned to CAP, a Percentage of Income Payment Program, from its longstanding rate discount program. This change may result in higher subsidies from CAP participants.
- **Provider Services:** NFG's expectation is to require faster turnaround by providers on the customer referral lists.
- **Landlord Participation:** NFG continues to work to improve the process for landlords to expedite the LIURP approval process.

3. Roadmap for LIURP Improvement

NFG has taken many steps to increase LIURP participation over the past few years and has seen impacts of their actions in a participation uptick. If NFG's additional efforts are not sufficient to reach LIURP goals, we recommend the following actions. However, each recommendation should be assessed relative to the additional participation increase needed and

relative to the projected costs and benefits of these efforts. Additional details on each recommended step are discussed in the Findings and Recommendations Section of the report.

A. Improve General Awareness of LIURP

Increase awareness of LIURP through brochures, email blasts, the NFG website, social media, and additional collaboration with groups that serve or interact with low-income households.

B. Increase Outreach to Potential Participants

Make additional phone calls to customers who have not responded to the initial NFG call, NFG letter, and provider outreach.

C. Sustain Enhanced Training for NFG Staff

Continue to provide ongoing in-depth training to NFG staff to ensure that they remain knowledgeable about all Universal Service Program offerings.

D. Train Service Providers on NFG Procedures and Guidelines

Continue efforts to educate providers on applicable guidelines for service delivery providers to improve understanding of NFG LIURP's requirements and benefits.

E. Increase Training for and Communication with NFG Service Delivery Providers

Provide regular training and communication with service delivery providers to ensure they understand LIURP opportunities and to furnish as many resources as possible to encourage LIURP service delivery.

F. Consider Additional Efforts to Address Health & Safety Issues and Renter Access

Address barriers to service delivery by remediating health and safety issues and increasing renter access to services.

G. Collect Data and Assess Progress

While conducting outreach calls to targeted LIURP participants, record information on customer awareness and knowledge about LIURP to determine the extent to which additional outreach is needed.

H. Continue to Reassess and Improve LIURP Marketing, Outreach, Training, and Materials on Regular Timeline

Continue to review and improve marketing, outreach, training, and program materials on a regular basis to ensure that they remain accurate and effective.

I. Continue to Assess Need for Additional LIURP Providers

NFG recently brought on new providers. After seeing how they perform, NFG should assess whether additional providers are needed.

I. Introduction

National Fuel Gas (NFG) has a Low-Income Usage Reduction Program (LIURP) that is designed to help low-income customers reduce their natural gas usage and their natural gas bills. NFG was directed by the Pennsylvania Public Utilities Commission to “...commission an independent third-party LIURP evaluation and needs assessment to help identify additional areas for improvement in the delivery and reach of its LIURP services.” This report presents information resulting from the evaluation, including a description of the research conducted, the findings from that research, and recommendations for NFG to improve its LIURP.

A. Research Goals

The overarching goal of this study was to provide NFG with information needed to improve LIURP to better serve low-income households within their service territory. Within this broad goal, the study aimed to address the following information objectives.

- How LIURP administration can be improved.
- Reasons for consistent underspending of the LIURP budget.
- Barriers to LIURP participation for low-income customers.
- Health and safety issues and remediation of those issues.
- Impacts of NFG’s LC-LIURP Pilot that serves smaller homes with disproportionate usage.
- Opportunities to increase coordination with other efficiency programs within NFG’s service territory.
- A plan to fully utilize NFG’s LIURP budget, including action steps.
- A Needs Assessment that characterizes NFG’s residential customers and estimates the number of customers eligible for CAP and LIURP.

B. Research Activities

The following research activities were undertaken to develop the required information.

- Background Research: We conducted a detailed review of materials related to NFG’s LIURP, including their Universal Service Plan for 2022-2026 approved at PUC Docket No. M-2021-3024935 (the Plan); their annual LIURP Evaluations for program years 2019, 2020, 2021, and 2022; their Low Consumption LIURP Pilot Assessments, and their LIURP outreach and marketing materials.
- NFG Interviews: We conducted in-depth telephone interviews with NFG managers and staff responsible for designing, managing, and implementing LIURP. These interviews provided more information on the challenges faced in reaching enrollment and budget

targets, interactions with customers and service providers, goals for the program moving forward, and ideas for improving the program.

- **LIURP Agency & Contractor Interviews:** We conducted in-depth telephone interviews with the five Community Based Organizations (CBOs) and the one independent contractor who delivers LIURP services. The interviews developed information on the service delivery challenges, health and safety barriers, how they can increase service delivery, coordination with other energy efficiency programs, and recommendations they have for the program.
- **Needs Assessment:** We analyzed the 2022 American Community Survey (ACS) data to provide NFG with an updated estimate of the number of customers in their service territory at various poverty levels by county and information on their characteristics.
- **LIURP Participant Survey:** We conducted a mixed mode web/telephone survey with LIURP participants to better understand their motivations for participation, ease of intake and enrollment, barriers to participation, understanding of services, program impact, satisfaction, and recommendations for program improvement.
- **LIURP Nonparticipant Survey:** We conducted a mixed mode web/telephone survey with customers who had not responded to invitations to participate in LIURP to understand their LIURP awareness and understanding, reasons for declining to participate, barriers to participation, how those barriers could be overcome, energy challenges in their homes, and challenges paying their energy bills.

C. Report Contents

Five sections follow this introduction.

- **Section II – National Fuel Low-Income Usage Reduction Program:** This section describes NFG’s LIURP design, implementation, challenges, and successes.
- **Section III – Needs Assessment:** This section characterizes NFG’s residential customers and estimates the number eligible for CAP and LIURP.
- **Section IV – LIURP Provider Research:** This section provides findings from in-depth interviews with NFG’s six LIURP service delivery providers.
- **Section V – LIURP Participant and Nonparticipant Research:** This section provides findings from quantitative surveys with LIURP participants and nonparticipants.
- **Section VI – Findings and Recommendations:** This section provides a summary of findings and recommendations from the research.

APPRISE prepared this report for National Fuel Gas. Any errors or omissions in this report are the responsibility of APPRISE. Further, the statements, findings, conclusions, and recommendations

are solely those of analysts from APPRISE and do not necessarily reflect the views of National Fuel Gas.

II. National Fuel Low-Income Usage Reduction Program

NFG's LIURP provides no-cost information and home improvements to high-usage low-income customers to reduce energy usage and energy bills. NFG has also worked to provide such services to those with more moderate consumption through its LC-LIURP Pilot Program.

NFG's LIURP has three components.

1. Low-Income Usage Reduction Program (LIURP): LIURP aims to reduce low-income customers' energy usage and bills.
2. Low-Consumption LIURP (LC-LIURP): NFG received temporary approval in 2020 for this pilot to assist customers in smaller homes with annual natural gas usage of 900 or more ccf and less than 1,300 ccf. In 2023, NFG received approval to extend this Pilot through the end of the current Plan.
3. Emergency Repair and Replacement Program (ERRP): ERRP assists LIURP-eligible customers with gas heating and hot water heating equipment emergency repairs or replacement.

A. Program Management and Administration

NFG's LIURP is managed by NFG with the support of Community Based Organizations (CBOs) and one private contractor that performs the audits and measure installations.

NFG's LIURP Budget increased from \$1,300,000 annually to \$1,391,000 beginning in 2023. The majority of the budget is split between LIURP and LC-LIURP. Any funds that are not spent are rolled over to the following year.

**Table II-1
LIURP Budget**

Category	Budget
LIURP	\$883,000
Low Consumption LIURP	
Emergency Repair and Replacement Program	\$300,000
Administration (approximately)	\$208,000
Total	\$1,391,000

NFG bids LIURP work out to community agencies and private contractors to obtain the lowest prices. They currently work with six organizations who provide these services. The CBOs that NFG works with have not completed as many LIURP jobs as NFG needs. Therefore, NFG has recently onboarded a new agency and a new private contractor.

NFG has worked to recruit additional providers with newspaper advertisements, Google searches, outreach, by word of mouth, and asking staff to reach out to their contacts. NFG

faces challenges bringing on new providers because a lack of qualified contractors with insulation, air sealing, and blower door testing experience or equipment.

NFG has partnered with a new private contractor and a new agency that works with the local electric utility and is aiming to coordinate more weatherization jobs.

NFG holds annual contractor meetings to improve consistency and communication about LIURP, share best practices, set goals and expectations, and answer questions. They expect that these meetings will lead to an increase in the number of LIURP jobs completed.

NFG plans to address the following in these meetings.

- Job goals and expectations
- Industry best practices
- Weatherization guidelines
- Job billing timeliness and accuracy
- Spending carry-over funds

B. Eligibility and Benefits

Customers must meet the following criteria to be eligible for LIURP.

- Customers must have annual natural gas consumption greater than or equal to 1,300 ccf.
- Income below 150 percent of the Federal Poverty Guidelines (FPG).
- Up to 20 percent of the annual budget can be spent on customers with income from 151 percent to 200 percent of the FPG.
- Customer has resided at the home for at least one year with 12 months of continuous service.
- Customer must not have received NFG LIURP in the past seven years.
- Written landlord approval is required before measures are installed for rental properties.
- Customer must not reside in a mobile home.

Customers must meet the following criteria to be eligible for LC-LIURP.

- Natural Gas Usage: Customers must have annual consumption greater than or equal to 900 ccf and less than 1,300 ccf.

- All regular LIURP eligibility factors apply. Prior to 2023 (when the LC-LIURP Pilot was expanded and authorized through the life of the Plan), there were additional restrictions on LC-LIURP which NFG asked to be removed to enhance program eligibility and participation.

Customers must meet the following criteria to be eligible for ERRP.

- Active gas heating account.
- Income below 200 percent of the Federal Poverty Guidelines (FPG).
- Homeowner living in the home for at least one year and intending to live in the home for at least one year following installation.
- Mobile homes are considered.
- Rental properties are not eligible.
- Customers are treated with LIURP following installation if eligible.

C. Participation and Expenditures

Table II-2 displays LIURP participation. Projected participation is the estimated maximum number of jobs that would expend all LIURP funds.

**Table II-2
LIURP Participation**

Program	Participation								
	Actual					Projected			
	2019	2020	2021	2022	2023	2024	2025	2026	2027
LIURP	123	77	93	78	78	86	83	80	77
LC-LIURP	0	5	6	28	5	148	143	137	132
ERRP	121	90	106	124	135	79	75	70	66
Total	244	172	205	230	218	313	301	287	275

Table II-3 displays mean LIURP job costs. LIURP jobs averaged close to \$7,000 per home in 2023, LC-LIURP averaged about \$3,600, and ERRP jobs averaged \$3,210.

Table II-3
LIURP Average Job Costs

Program	Mean Job Costs								
	Actual					Projected			
	2019	2020	2021	2022	2023	2024	2025	2026	2027
LIURP	\$5,741	\$5,624	\$5,832	\$5,409	\$6,984	\$5,900	\$6,100	\$6,300	\$6,600
LC-LIURP	--	\$4,026	\$5,752	\$5,140	\$3,631	\$5,600	\$5,800	\$6,000	\$6,300
ERRP	\$2,411	\$2,073	\$2,507	\$3,034	\$3,210	\$3,400	\$3,600	\$3,800	\$4,100

Table II-4 displays total LIURP expenditures. The total expenditures in 2022 were about \$850,000.

Table II-4
LIURP Expenditures

Program	Actual Expenditures				
	2019	2020	2021	2022	2023
LIURP	\$886,853	\$613,541	\$672,611	\$327,324	\$607,920
LC-LIURP	--	\$20,131	\$34,511	\$143,934	\$18,153
ERRP	\$291,744	\$186,563	\$265,846	\$376,242	\$433,345
Total	\$1,178,597	\$820,235	\$972,968	\$847,500	\$1,059,418

D. Program Coordination

NFG aims to coordinate LIURP with the electric utilities and the Weatherization Assistance Programs through the CBOs. However, they face the following challenges.

- **Eligibility Criteria:** Most customers do not have both high gas usage to make them eligible for NFG's program and high electric usage to make them eligible for the electric utility's LIURP. However, agencies reported that Penelec and Penn Power don't require the electric usage minimum if the job is coordinated with WAP or a gas utility, so this should allow for coordination with NFG LIURP.
- **WAP Priority:** WAP waiting lists can hinder coordination because the agencies are unable to move customers within the WAP list.
- **Usage Data:** Service providers need to call NFG (with customer consent) or obtain the utility bill information from the customer to assess natural gas usage for LIURP eligibility for coordinated jobs.

- Prior Participants: WAP only re-serves customers after 15 years.
- Limited Results: NFG has had limited results with electric utility coordination.

E. Marketing and Outreach

NFG developed new LIURP marketing materials in 2023. Their LIURP Frequently Asked Questions (FAQ) and Features sheet include information for the customer that explains the LIURP program and benefits.

NFG conducts general LIURP outreach, as well as agency and legislative training, so that all county offices and legislative officials are aware of the program. NFG undertakes the following activities to obtain LIURP participation.

- Direct NFG CAP Referrals: Once a customer enrolls in CAP, their usage is analyzed and the customer is flagged for LIURP if the criteria is met. This is one of the primary ways that customers are identified for LIURP participation.

While CAP participants are required to participate in LIURP, the requirement is not currently enforced. NFG is actively working to increase CAP participation, so enforcing the LIURP participation requirement could be counterproductive for CAP. However, consistent with the Plan, NFG has plans to send CAP participants a letter reminding them that CAP requires participation in LIURP if eligible.

- Call Center Referrals: These representatives make referrals for customers who have bill payment problems or express an interest in weatherization. The call center representatives have been trained and also receive refresher training for special programs. NFG includes special programs in Collections training in the spring and a High Bill training in the fall.

More in-depth training was provided in 2024 to continue improving awareness and understanding of all NFG programs with a goal of receiving more LIURP referrals from the call center representatives and increasing participation in all programs. This training included more detailed information for Universal Service Programs including LIURP. NFG received positive feedback from the representatives and noticed an uptick in referrals after this training. The program-focused training is provided to all new hires and is repeated once a year.

- Field Operation Referrals: These staff also receive program information in the spring and fall and they often refer customers to Energy Management. Most referrals are a result of inoperable appliances that fall under ERRP. Customers are also considered for weatherization if they meet consumption requirements.
- High Usage: Customers with annual usage of 1,300 ccf or more are referred to NFG's Energy Management Department for possible participation in LIURP.

- **Moderate Usage:** Customers with annual usage between 900 ccf and 1,299 ccf are referred to the Energy Management Department for possible participation in the LC-LIURP Pilot.
- **ERRP Referrals:** Eligible customers who need furnace or water heater repair or replacement are referred for possible participation in ERRP. While usage is not a factor for ERRP, customers must meet income thresholds, own their home, and have 12 months of service. Customers will be referred for full weatherization if deemed eligible.
- **Bill Inserts:** NFG sends a newsletter with customer bills typically in February, June, and November. A bill stuffer with all the low-income programs and weatherization programs is sent at least once per year. This stuffer is also included in all termination notices and delivered by field personnel with pre-termination notices.
- **Social Media:** NFG has completed promotions for weatherization via social media.
- **Agency Referrals:** NFG receives some, but not many, referrals from collaboration or coordination with agencies. CBOs receive the same program information as the call center and staff at least once annually for consistency.
- **Account Review:** NFG tracks low-income customers by collecting income provided during payment arrangements, CAP participation, Neighbor for Neighbor recipients, LIURP, and LIHEAP recipients. Customers at or below 200 percent of the FPL that meet the consumption threshold are reviewed for LIURP.
- **LIURP is part of NFG outreach during events that NFG attends. Materials include assistance program brochures, LIURP features sheets, LIURP FAQ sheets, Energy Tips sheets, and energy conservation kits (which contain energy conservation/weatherization materials such as sealant foam, switch plates, weather stripping and window insulation shrink kit). The outreach events include but are not limited to the following.**
 - Tables during school family resource fairs
 - Legislator education and agency training
 - Senior fairs and community events
 - Landlord/Apartment Association events
 - Universal Service Advisory Committee meetings (USAC)
 - Networking events
 - Distribution of brochures to local agencies
 - Bill inserts/newsletters
- **Statewide Branding:** NFG worked with other PA utilities to launch a statewide advertising campaign “Be Energy Wise” coordinated by the Energy Association of Pennsylvania (EAP). The purpose was to brand LIURP statewide. Utilities received a toolkit to be used for outreach. NFG has used the Energy Wise logo/sticker with all

LIURP outreach materials such as postcards, FAQ sheets, and their features sheet. It is also used in education materials and door packets for customers.

F. Service Delivery

NFG began making initial LIURP outreach calls to customers targeted for services at the end of 2023. These calls are made before the customers are assigned to the contractors to reduce customer skepticism and increase acceptance of LIURP. Prior to these calls, NFG would send an informational LIURP letter to the customer at the same time that they sent the referral to the service delivery organization. The letter informs the customer that they will be contacted by the particular organization.

The initial calls were only recently implemented at the time of this research, but NFG perceives that they have had a very positive impact on customer acceptance of LIURP services. They attribute this to customers' familiarity with NFG, as opposed to the previous process where the initial contact was from an unknown provider.

NFG provides screened customers to contractors along with their consumption history. Assignments to contractors consider several factors including but not limited to the customer's location (provider's location) and CAP status. The contractors are instructed to call the customer four times at different times on different days, and then to send a letter on the day of the last phone attempt. If there is no response to the letter, the job is cancelled and returned to NFG. If the customer responds after the job is returned, they are reconsidered for LIURP.

LIURP delivery includes a home energy audit and may include (but not be limited to) the following services and measures when they are estimated to be cost-effective.

- Heating system safety check and clean and tune
- Energy audit and energy education
- Blower door testing pre- and post- installations
- Blower door-guided air sealing
- Attic insulation
- Wall insulation
- Heating system repairs

NFG provides a health and safety allowance and an incidental repair allowance. Health and safety measures are home repairs that permit weatherization efforts to proceed. NFG's allowance is \$500 for initial pre-approved contractor spending that meets the health and safety guidelines. On a case-by-case basis, NFG approves up to \$1,000 prior to the start of the work that will enable weatherization to proceed.

The incidental repairs allowance is up to \$100 pre-approved, and up to \$200 on a case-by-case basis for repairs that are needed to complete the home's weatherization. These repairs include work such as window repair, venting/pipe issues, and chimney repair.

G. Quality Control

NFG performs quality control inspections on at least 25 percent of completed jobs. The inspections include customer discussions to assess overall satisfaction with the job and conduct of the contractors, as well as verifying that the job was performed. No testing is performed during the inspections.

NFG finds that provider invoices are generally correct and they rarely find issues with the jobs. If there are any issues, they contact the providers. It is quite uncommon for a contractor to be sent back to work on a job.

H. Energy Savings

Table II-5 displays LIURP savings as reported in the annual evaluations from 2019 through 2022. Average percent savings ranged from 13.6 percent for 2020 jobs (likely lower because of the pandemic) to 21.9 percent in 2022. These savings, even those from 2020, are high compared to other LIURP programs that APPRISE has evaluated. This is likely related to the enforced criteria for pre-treatment usage.

**Table II-5
Annual LIURP Gas Savings**

Year	# Jobs	MCF			% Saved
		Pre-Usage	Post-Usage	Gas Savings	
2019	123	180.9	145.7	35.2	19.5%
2020	77	187.1	161.7	25.4	13.6%
2021	93	209.5	173.0	36.5	17.4%
2022	78	202.0	157.8	44.2	21.9%

Table II-6 displays LC-LIURP savings reported by NFG for 39 of the 44 completed jobs. Other than lower average savings for the 2023 jobs, savings for these jobs were also relatively high, ranging from 16.9 percent in 2022 to 19.4 percent in 2020. Across all LC-LIURP jobs, average annual savings were 22.9 MCF per home or 16 percent of pre-treatment usage.

**Table II-6
Annual LC-LIURP Gas Savings**

Year	# Jobs	Pre-Usage	Post-Usage	Gas Savings	% Saved
		MCF			
2020	3	131.9	106.3	25.6	19.4%
2021	6	136.7	112.3	24.4	17.8%
2022	26	146.6	121.8	24.8	16.9%
2023	4	140.3	134.1	6.2	4.4%

Year	# Jobs	Pre-Usage	Post-Usage	Gas Savings	% Saved
		MCF			
All Jobs	39	143.3	120.4	22.9	15.9%

I. Challenges and Opportunities

A key challenge faced with LIURP is lack of customer response, resulting in an inability to expend the full LIURP budget.

Contractors have told NFG that their challenge is obtaining response from customers to their outreach attempts, and customer cancellations after the jobs are scheduled. They also reported that they prioritize the Weatherization Assistance Program (WAP) jobs over LIURP, because they lose their WAP funding if it is not expended and they can also lose their other program funding as well.

NFG reported that customers often face difficulties when scheduling the work to be done on their homes. NFG does not believe that they can get the providers to deliver services on the weekend, and their most productive contractor provides services four days per week (10-hour days).

NFG also faces challenges serving renters. This requires that the tenant qualifies for assistance, receives a signature approval from the landlord, and that the landlord does not increase the rent for one year. For multi-units, all tenants need to qualify. This can make it difficult to complete weatherization on rentals.

NFG has undertaken the following actions to increase participation in LIURP.

- Improved outreach materials
- Calls to potential LIURP customers
- Increased Health & Safety and incidental allowances
- Reduced burden of the Landlord Approval Form
- Contracted with additional providers
- Initiated contractor payments of \$150 for no-show customers to incentivize contractors to reach out to customers. This provides compensation for their outreach efforts, time, and expenses associated with scheduling and attempting to complete the weatherization jobs.
- Expanded LC-LIURP
- In-house training and additional awareness among NFG staff
- Increased outreach to customers and community partners

Additional changes that they think would be beneficial include the following.

- NFG is planning to modify the non-response letter to address CAP participants who have not participated in LIURP.
- Faster turnaround by providers on the customer referral lists.

NFG reported greater success in 2023 with increased participation and LIURP budget utilization. They believe this is a result of a new staff member focused on outreach and the initial calls made to customers prior to the contractor outreach.

NFG would like to continue to improve the process for landlords to expedite the LIURP approval process. Landlord education about LIURP could also potentially help. NFG has been networking with landlord/apartment associations in their service territory to increase program awareness and education.

III. National Fuel Needs Assessment

This section provides detailed information on the demographic characteristics of NFG's residential customers and an estimate of the number of customers who are eligible for CAP and LIURP. Customer characteristics, including main heating fuel, household type, primary language, English proficiency, housing type, and home ownership are analyzed at the statewide, NFG territory, and county level, and by the income eligibility level for CAP and LIURP.

A. Methodology

NFG provided a list of counties that comprise their service territory and a count of residential customers within each county. These counts were used to determine which Census geographic areas to include in this demographic analysis.

The data source for this analysis was the Census Bureau's 2018-2022 American Community Survey (ACS) 5-year Public Use Microdata (PUMS) for Pennsylvania, which provides survey responses at the household and individual level within Public Use Microdata Areas (PUMAs). PUMAs are geographical areas defined by the Census Bureau that contain at least 100,000 households and may span multiple ZIP codes, counties, or other political boundaries within a state. Since the data source is a multi-year file, it contains PUMA codes created from both the 2010 and 2020 Census. Records from 2021 and earlier used boundaries based on the 2010 Census definitions while records from 2022 used boundaries from the 2020 Census.

Using the Missouri Census Data Center's Geocorr webtool¹, PUMAs were defined for the counties within National Fuel Gas' service area. Each county was assigned two values representing the proportion of its geographic area that aligned with a given PUMA and the proportion of the PUMA that aligned with the county boundaries. For example, if a county is entirely within a PUMA's boundaries, it would receive a value of one for that PUMA. However, if a county is split evenly between two PUMAs, it would receive a value of 0.5 for each of the two PUMAs. Similarly, a PUMA entirely within a county's boundaries would receive a value of one for that county. But if a PUMA is equally divided among three counties, it would receive a value of 0.33 for each of the three counties. Counties were grouped together if they shared a PUMA because the data cannot be analyzed at a more granular level than the PUMA. PUMAs were combined if they shared a county because the goal of the analysis was to analyze the data at the county level or higher.

Table III-1 shows the estimate of total number of households and households with gas service in each PUMA based on the 2018-2022 ACS PUMS data. At least 50 percent of households in each PUMA within NFG's service territory used natural gas. However, NFG reported a low number of customers in two PUMAs, associated with Armstrong County

¹<https://medc.missouri.edu/applications/geocorr.html>. This tool allows users to generate custom geographic correspondence files for defined geographies in the United States, such as counties, census tracts, ZIP codes, and PUMAs. For example, a file could show each intersection between two geographies, the size of the intersection, and the proportion of population within each intersection.

and Butler County, and hence, these were excluded from the analysis. Erie, Crawford, and Warren Counties have a lower ACS estimate of gas households than the number of customers reported by NFG. This could be due to homes not counted in the Census because they are not the household's primary residence.

Table III-1
American Community Survey PUMA-Level Analysis
National Fuel Gas Territory Defined

County	PUMA (2010)	PUMA (2020)	Total Households	Gas Households	Percent of Gas Households	NFG Reported Customers	Percent of NFG Customers out of Gas Households	Include/Exclude
Armstrong County*	01900	01900	27,602	15,381	56%	595	4%	Exclude
Butler County	01600	01600	79,496	54,347	68%	2,099	4%	Exclude
Clearfield, McKean, Elk, Potter, & Cameron Counties	00300	00300	69,962	39,977	57%	24,969	62%	Include
Crawford & Warren Counties	00200	00200	49,386	26,051	53%	27,054	104%	Include
Erie County	00102	00112	109,487	83,174	76%	91,442	110%	Include
	00101	00111						Include
Mercer County	01400	01400	45,889	28,211	61%	26,386	94%	Include
Venango, Jefferson, Clarion, & Forest Counties	01300	01300	55,995	36,080	64%	25,416	70%	Include

*Note: Armstrong County serviced by 01900, which is associated with Armstrong County and Indiana County. Since Armstrong County's area only makes up 46% of PUMA 01900, the household numbers have been adjusted accordingly.

B. Assessment Findings

This section provides an analysis of the number of NFG customers by county, poverty level, and program eligibility based on data from the American Community Survey. Table III-2 provides the number of households with gas bills compared to those with gas charges included in other bills such as rent or electric bill, or with no gas charges, both within the NFG service territory and the rest of Pennsylvania. There are 2,593,579 households in Pennsylvania with a gas bill and 213,493 households in NFG territory with a gas bill. These households will comprise the analysis group for this study.

Table III-2
Number of Households in Pennsylvania with and without Gas Bills

Geographic Area	Gas Bill Households	No Gas Bill Households		Total Households
		Included in Other Bills	No Charges	
NFG Territory	213,493	15,452	101,774	330,719
Clearfield, McKean, Elk, Potter, & Cameron Counties	39,977	2,678	27,307	69,962
Crawford & Warren Counties	26,051	2,110	21,225	49,386
Erie County	83,174	6,064	20,249	109,487
Mercer County	28,211	2,364	15,314	45,889
Venango, Jefferson, Clarion, & Forest Counties	36,080	2,236	17,679	55,995
Outside NFG Territory	2,380,086	473,955	2,008,962	4,863,003
Pennsylvania	2,593,579	489,407	2,110,736	5,193,722

Table III-3 displays the number of households with gas and non-gas heating. Of the 213,493 households in NFG territory with gas bills, 90 percent have gas heating. This is similar to the statewide proportion of gas heating households.

Table III-3
Heating Type
Households with Gas Bills

Geographic Area	Gas Bill					
	Gas Heating		Non-Gas Heating		Total	
	#	%	#	%	#	%
NFG Territory	192,919	90%	20,574	10%	213,493	100%
Clearfield, McKean, Elk, Potter, & Cameron Counties	32,793	82%	7,184	18%	39,977	100%
Crawford & Warren Counties	23,372	90%	2,679	10%	26,051	100%
Erie County	77,882	94%	5,292	6%	83,174	100%
Mercer County	25,923	92%	2,288	8%	28,211	100%
Venango, Jefferson, Clarion, & Forest Counties	32,949	91%	3,131	9%	36,080	100%
Outside NFG Territory	2,003,624	84%	376,462	16%	2,380,086	100%
Pennsylvania	2,196,543	85%	397,036	15%	2,593,579	100%

Each household was assigned a poverty level group based on the household size and ratio of household income to the 2022 Federal Poverty Level Guidelines (FPL). Households were analyzed by poverty levels corresponding to the income eligibility limits for CAP and LIURP. Households with income less than or equal to 150 percent of the FPL are eligible

for CAP and LIURP. NFG reserves some of its LIURP services for households between 150 percent and 200 percent of the FPL.

Table III-4 displays the number of households with gas bills by poverty level. The distribution of income in NFG's service territory is about the same as in Pennsylvania overall, with 18 percent of NFG households at or below 150 percent of the FPL compared to 15 percent outside NFG territory.

Table III-4
Poverty Level
Households with Gas Bills

Geographic Area	Poverty Level						Total	
	≤ 150%		151% - 200%		> 200%		#	%
	#	%	#	%	#	%		
NFG Territory	37,867	18%	20,590	10%	155,036	73%	213,493	100%
Clearfield, McKean, Elk, Potter, & Cameron Counties	6,310	16%	4,251	11%	29,416	74%	39,977	100%
Crawford & Warren Counties	4,424	17%	2,690	10%	18,937	73%	26,051	100%
Erie County	15,713	19%	7,120	9%	60,341	73%	83,174	100%
Mercer County	5,062	18%	2,630	9%	20,519	73%	28,211	100%
Venango, Jefferson, Clarion, & Forest Counties	6,358	18%	3,899	11%	25,823	72%	36,080	100%
Outside NFG Territory	359,602	15%	168,679	7%	1,851,805	78%	2,380,086	100%
Pennsylvania	397,469	15%	189,269	7%	2,006,841	78%	2,593,579	100%

Tables III-5, III-6, and III-7 display the number of households with each heating type by poverty level for households with gas bills. The percentage of households with gas heating across poverty levels are consistent.

Table III-5
Heating Type by Poverty Level
Pennsylvania Households with Gas Bills

Poverty Level	Heating Type				Total	
	Gas Heating		Non-Gas Heating		#	%
	#	%	#	%		
≤ 150%	331,782	83%	65,687	17%	397,469	100%
151% - 200%	159,739	84%	29,530	16%	189,269	100%
> 200%	1,705,022	85%	301,819	15%	2,006,841	100%
Total	2,196,543	85%	397,036	15%	2,593,579	100%

Table III-6 shows that households in NFG's service territory are more likely to use gas heat compared to houses outside NFG territory. There is little variation between income levels.

Table III-6
Heating Type by Poverty Level and Geographic Area
Pennsylvania Households with Gas Bills

Geographic Area	Poverty Level	Heating Type				Total	
		Gas Heating		Non-Gas Heating			
		#	%	#	%	#	%
NFG Territory	≤ 150%	33,917	90%	3,950	10%	37,867	100%
	151% - 200%	18,629	90%	1,961	10%	20,590	100%
	> 200%	140,373	91%	14,663	9%	155,036	100%
	Total	192,919	90%	20,574	10%	213,493	100%
Outside NFG Territory	≤ 150%	297,865	83%	61,737	17%	359,602	100%
	151% - 200%	141,110	84%	27,569	16%	168,679	100%
	> 200%	1,564,649	84%	287,156	16%	1,851,805	100%
	Total	2,003,624	84%	376,462	16%	2,380,086	100%

Table III-7 shows considerable variability in the percentage of NFG customers who use gas heat by county, ranging from 82 percent in Clearfield, McKean, Elk, Potter, and Cameron Counties to 94 percent in Erie County. The percentage of households with gas heat is fairly consistent across poverty levels within counties, except for Clearfield, McKean, Elk, Potter, and Cameron Counties.

Table III-7
Heating Type by Poverty Level and County
NFG Territory Households with Gas Bills

County	Poverty Level	Heating Type				Total	
		Gas Heating		Non-Gas Heating			
		#	%	#	%	#	%
Clearfield, McKean, Elk, Potter, & Cameron Counties	≤ 150%	4,831	77%	1,479	23%	6,310	100%
	151% - 200%	3,606	85%	645	15%	4,251	100%
	> 200%	24,356	83%	5,060	17%	29,416	100%
	Total	32,793	82%	7,184	18%	39,977	100%
Crawford & Warren Counties	≤ 150%	4,002	90%	422	10%	4,424	100%
	151% - 200%	2,414	90%	276	10%	2,690	100%
	> 200%	16,956	90%	1,981	10%	18,937	100%

County	Poverty Level	Heating Type				Total	
		Gas Heating		Non-Gas Heating			
		#	%	#	%	#	%
	Total	23,372	90%	2,679	10%	26,051	100%
Erie County	≤ 150%	14,699	94%	1,014	6%	15,713	100%
	151% - 200%	6,644	93%	476	7%	7,120	100%
	> 200%	56,539	94%	3,802	6%	60,341	100%
	Total	77,882	94%	5,292	6%	83,174	100%
Mercer County	≤ 150%	4,579	90%	483	10%	5,062	100%
	151% - 200%	2,396	91%	234	9%	2,630	100%
	> 200%	18,948	92%	1,571	8%	20,519	100%
	Total	25,923	92%	2,288	8%	28,211	100%
Venango, Jefferson, Clarion, & Forest Counties	≤ 150%	5,806	91%	552	9%	6,358	100%
	151% - 200%	3,569	92%	330	8%	3,899	100%
	> 200%	23,574	91%	2,249	9%	25,823	100%
	Total	32,949	91%	3,131	9%	36,080	100%

Demographics

This section provides analysis of household characteristics including vulnerable household members, primary language spoken, and English proficiency. Tables III-8, III-9, and III-10 display the number of households with vulnerable members by poverty level for households with a gas bill. Households were identified as vulnerable if they had at least one member who was disabled, younger than six, or 65 years of age or older.

Vulnerable members are more likely to be present in low-income households. While 71 percent of Pennsylvania households with incomes at or below 150 percent of the FPL have a vulnerable member, only 55 percent of all households have a vulnerable member. More than a third of low-income households have elderly or disabled members while only 16 percent have young children.

Table III-8
Households with Vulnerable Members by Poverty Level
Pennsylvania Households with Gas Bills

Poverty Level	Household Type							
	Elderly		Children		Disabled		Any Vulnerable	
	#	%	#	%	#	%	#	%
≤ 150%	135,736	34%	64,760	16%	172,492	43%	280,721	71%
151% - 200%	84,724	45%	28,946	15%	71,208	38%	136,242	72%
> 200%	628,796	31%	213,751	11%	455,878	23%	1,019,854	51%

Poverty Level	Household Type							
	Elderly		Children		Disabled		Any Vulnerable	
	#	%	#	%	#	%	#	%
Total	849,256	33%	307,457	12%	699,578	27%	1,436,817	55%

Table III-9 shows that households in NFG's service territory are somewhat more likely to have vulnerable members compared to households outside NFG territory. This is driven by a larger percentage of households with elderly and disabled members in NFG's service territory.

Table III-9
Households with Vulnerable Members by Poverty Level and Geographic Area
Pennsylvania Households with Gas Bills

Geographic Area	Poverty Level	Household Type							
		Elderly		Children		Disabled		Any Vulnerable	
		#	%	#	%	#	%	#	%
NFG Territory	≤ 150%	12,695	34%	5,979	16%	17,421	46%	27,446	72%
	151% - 200%	9,352	45%	2,497	12%	8,060	39%	14,526	71%
	> 200%	54,148	35%	13,934	9%	40,383	26%	83,674	54%
	Total	76,195	36%	22,410	10%	65,864	31%	125,646	59%
Outside NFG Territory	≤ 150%	123,041	34%	58,781	16%	155,071	43%	253,275	70%
	151% - 200%	75,372	45%	26,449	16%	63,148	37%	121,716	72%
	> 200%	574,648	31%	199,817	11%	415,495	22%	936,180	51%
	Total	773,061	32%	285,047	12%	633,714	27%	1,311,171	55%

Table III-10 displays households by county, poverty level, and vulnerable members. There is variation between counties serviced by NFG. While 57 percent of households in Erie County have a vulnerable member, 62 percent of households in Mercer County have a vulnerable member.

Table III-10
Households with Vulnerable Members by Poverty Level and County
NFG Territory Households with Gas Bills

County	Poverty Level	Household Type							
		Elderly		Children		Disabled		Any Vulnerable	
		#	%	#	%	#	%	#	%
Clearfield, McKean, Elk, Potter,	≤ 150%	2,531	40%	908	14%	3,323	53%	4,970	79%
	151% - 200%	1,877	44%	520	12%	1,724	41%	2,978	70%

County	Poverty Level	Household Type							
		Elderly		Children		Disabled		Any Vulnerable	
		#	%	#	%	#	%	#	%
& Cameron Counties	> 200%	10,757	37%	2,379	8%	8,413	29%	16,355	56%
	Total	15,165	38%	3,807	10%	13,460	34%	24,303	61%
Crawford & Warren Counties	≤ 150%	1,606	36%	837	19%	1,970	45%	3,346	76%
	151% - 200%	1,283	48%	342	13%	936	35%	1,940	72%
	> 200%	6,556	35%	1,660	9%	4,614	24%	9,903	52%
	Total	9,445	36%	2,839	11%	7,520	29%	15,189	58%
Erie County	≤ 150%	4,577	29%	2,541	16%	6,546	42%	10,607	68%
	151% - 200%	2,965	42%	886	12%	2,705	38%	4,816	68%
	> 200%	20,324	34%	5,688	9%	14,556	24%	31,793	53%
	Total	27,866	34%	9,115	11%	23,807	29%	47,216	57%
Mercer County	≤ 150%	1,643	32%	834	16%	2,660	53%	3,957	78%
	151% - 200%	1,479	56%	258	10%	1,035	39%	1,994	76%
	> 200%	7,041	34%	2,011	10%	6,222	30%	11,592	56%
	Total	10,163	36%	3,103	11%	9,917	35%	17,543	62%
Venango, Jefferson, Clarion, & Forest Counties	≤ 150%	2,338	37%	859	14%	2,922	46%	4,566	72%
	151% - 200%	1,748	45%	491	13%	1,660	43%	2,798	72%
	> 200%	9,470	37%	2,196	9%	6,578	25%	14,031	54%
	Total	13,556	38%	3,546	10%	11,160	31%	21,395	59%

Table III-11, III-12, and III-13 display the primary language spoken at home by poverty level among households with gas bills. Table III-11 shows that 86 percent of households in Pennsylvania speak English at home and six percent speak Spanish. Low-income households are more likely to speak Spanish and less likely to speak English at home compared to higher-income households. The percentage of households speaking other Indo-European or Asian and Pacific Island languages remains consistent across poverty levels.

Table III-11
Primary Language Spoken by Poverty Level
Pennsylvania Households with Gas Bills

Poverty Level	Primary Language									
	English		Spanish		Other Indo-European		Asian and Pacific Island		Other	
	#	%	#	%	#	%	#	%	#	%
≤ 150%	316,137	80%	46,360	12%	17,302	4%	11,919	3%	5,751	1%
151% - 200%	158,448	84%	15,457	8%	8,112	4%	4,529	2%	2,723	1%

Poverty Level	Primary Language									
	English		Spanish		Other Indo-European		Asian and Pacific Island		Other	
	#	%	#	%	#	%	#	%	#	%
> 200%	1,760,541	88%	95,944	5%	88,530	4%	46,161	2%	15,665	1%
Total	2,235,126	86%	157,761	6%	113,944	4%	62,609	2%	24,139	1%

Table III-12 shows that NFG's service territory has a higher proportion of English-speaking households compared to the rest of Pennsylvania. Only one percent of households in NFG's service territory speak Spanish as their primary language, compared to seven percent of households outside NFG's service territory.

Table III-12
Primary Language Spoken by Poverty Level
Pennsylvania Households with Gas Bills

Geographic Area	Poverty Level	Primary Language									
		English		Spanish		Other Indo-European		Asian and Pacific Island		Other	
		#	%	#	%	#	%	#	%	#	%
NFG Territory	≤ 150%	35,506	94%	772	2%	997	3%	149	<1%	443	1%
	151% - 200%	19,748	96%	261	1%	383	2%	128	1%	70	<1%
	> 200%	149,001	96%	1,631	1%	3,271	2%	760	<1%	373	<1%
	Total	204,255	96%	2,664	1%	4,651	2%	1,037	<1%	886	<1%
Outside NFG Territory	≤ 150%	280,631	78%	45,588	13%	16,305	5%	11,770	3%	5,308	1%
	151% - 200%	138,700	82%	15,196	9%	7,729	5%	4,401	3%	2,653	2%
	> 200%	1,611,540	87%	94,313	5%	85,259	5%	45,401	2%	15,292	1%
	Total	2,030,871	85%	155,097	7%	109,293	5%	61,572	3%	23,253	1%

Table III-13 shows that all counties in NFG's service territory except Erie have over 95 percent households speaking English as their primary language. Erie County has the highest percentage of Spanish-speaking and other Indo-European-speaking households.

Table III-13
Primary Language Spoken by Poverty Level
NFG Territory Households with Gas Bills

County	Poverty Level	Primary Language									
		English		Spanish		Other Indo-European		Asian and Pacific Island		Other	
		#	%	#	%	#	%	#	%	#	%
Clearfield, McKean, Elk, Potter, & Cameron Counties	≤ 150%	6,209	98%	56	1%	45	1%	0	0%	0	0%
	151% - 200%	4,166	98%	44	1%	41	1%	0	0%	0	0%
	> 200%	28,515	97%	243	1%	397	1%	231	1%	30	<1%
	Total	38,890	97%	343	1%	483	1%	231	1%	30	<1%
Crawford & Warren Counties	≤ 150%	4,276	97%	23	1%	59	1%	40	1%	26	1%
	151% - 200%	2,586	96%	56	2%	44	2%	4	<1%	0	0%
	> 200%	18,539	98%	122	1%	227	1%	49	<1%	0	0%
	Total	25,401	98%	201	1%	330	1%	93	<1%	26	<1%
Erie County	≤ 150%	13,932	89%	549	3%	746	5%	84	1%	402	3%
	151% - 200%	6,595	93%	141	2%	221	3%	110	2%	53	1%
	> 200%	56,983	94%	803	1%	1,935	3%	352	1%	268	<1%
	Total	77,510	93%	1,493	2%	2,902	3%	546	1%	723	1%
Mercer County	≤ 150%	4,902	97%	59	1%	77	2%	11	<1%	13	<1%
	151% - 200%	2,544	97%	20	1%	49	2%	0	0%	17	<1%
	> 200%	19,839	97%	126	1%	424	2%	71	<1%	59	<1%
	Total	27,285	97%	205	1%	550	2%	82	<1%	89	<1%
Venango, Jefferson, Clarion, & Forest Counties	≤ 150%	6,187	97%	85	1%	70	1%	14	<1%	2	<1%
	151% - 200%	3,857	99%	0	0%	28	1%	14	<1%	0	0%
	> 200%	25,125	97%	337	1%	288	1%	57	<1%	16	<1%
	Total	35,169	97%	422	1%	386	1%	85	<1%	18	<1%

Tables III-14 and III-15 display English proficiency by poverty level for households with gas bills in Pennsylvania. In Pennsylvania as a whole, seven percent of households with income at or below 150 percent of FPL are limited-English proficient, and only three percent of high-income households are limited-English proficient. NFG territory has higher rates of English proficiency than the rest of the state. Low-income households in NFG territory are much more likely to be proficient in English compared to low-income households in the rest of the state.

Table III-14
English Proficiency by Poverty Level
Pennsylvania Households with Gas Bills

Geographic Area	Poverty Level	English Proficiency			
		English Proficient		Limited English Proficiency	
		#	%	#	%
NFG Territory	≤ 150%	37,385	99%	482	1%
	151% - 200%	20,434	99%	156	1%
	> 200%	154,716	100%	320	<1%
	Total	212,535	100%	958	<1%
Outside NFG Territory	≤ 150%	332,183	92%	27,419	8%
	151% - 200%	161,043	95%	7,636	5%
	> 200%	1,818,343	98%	33,462	2%
	Total	2,311,569	97%	68,517	3%
Pennsylvania	≤ 150%	369,568	93%	27,901	7%
	151% - 200%	181,477	96%	7,792	4%
	> 200%	1,973,059	98%	33,782	2%
	Total	2,524,104	97%	69,475	3%

Table III-15 shows that all counties in NFG's service territory except Erie have 99 percent to 100 percent of households that are English Proficient across all poverty levels.

Table III-15
English Proficiency by Poverty Level
NFG Territory with Gas Bills

County	Poverty Level	English Proficiency			
		English Proficient		Limited English Proficiency	
		#	%	#	%
Clearfield, McKean, Elk, Potter, & Cameron Counties	≤ 150%	6,301	100%	9	<1%
	151% - 200%	4,251	100%	0	0%
	> 200%	29,383	100%	33	<1%
	Total	39,935	100%	42	<1%
Crawford & Warren Counties	≤ 150%	4,405	100%	19	<1%
	151% - 200%	2,672	99%	18	<1%
	> 200%	18,933	100%	4	<1%
	Total	26,010	100%	41	<1%
Erie County	≤ 150%	15,302	97%	411	3%

County	Poverty Level	English Proficiency			
		English Proficient		Limited English Proficiency	
		#	%	#	%
	151% - 200%	6,982	98%	138	2%
	> 200%	60,142	100%	199	<1%
	Total	82,426	99%	748	1%
Mercer County	≤ 150%	5,026	99%	36	1%
	151% - 200%	2,630	100%	0	0%
	> 200%	20,477	100%	42	<1%
	Total	28,133	100%	78	<1%
Venango, Jefferson, Clarion, & Forest Counties	≤ 150%	6,351	100%	7	<1%
	151% - 200%	3,899	100%	0	0%
	> 200%	25,781	100%	42	<1%
	Total	36,031	100%	49	<1%

Home Characteristics

This section provides information on the homes in NFG's service territory compared to Pennsylvania overall. Table III-16 and III-17 show home ownership by poverty level among households with gas bills. Three-quarters of households in Pennsylvania own their home, but this varies by income, with around half of low-income households and more than 80 percent of higher-income households owning their homes. Homeownership rates are similar for low-income households inside NFG's service territory and the rest of the state.

**Table III-16
Home Ownership by Poverty Level
Pennsylvania Households with Gas Bills**

Geographic Area	Poverty Level	Ownership Status			
		Own		Rent	
		#	%	#	%
NFG Territory	≤ 150%	19,849	52%	18,018	48%
	151% - 200%	14,485	70%	6,105	30%
	> 200%	131,919	85%	23,117	15%
	Total	166,253	78%	47,240	22%
Outside NFG Territory	≤ 150%	186,932	52%	172,670	48%
	151% - 200%	107,717	64%	60,962	36%
	> 200%	1,488,849	80%	362,956	20%
	Total	1,783,498	75%	596,588	25%
Pennsylvania	≤ 150%	206,781	52%	190,688	48%

Geographic Area	Poverty Level	Ownership Status			
		Own		Rent	
		#	%	#	%
	151% - 200%	122,202	65%	67,067	35%
	> 200%	1,620,768	81%	386,073	19%
	Total	1,949,751	75%	643,828	25%

Table III-17 shows that Clearfield, McKean, Elk, Potter, and Cameron Counties have the highest rate of homeownership at 83 percent, while Erie County and Mercer County have the lowest rate of homeownership at 76 and 75 percent respectively. More than 80 percent of higher-income households own their home in every county. Less than 50 percent of low-income households in Erie County and Mercer County own their home.

Table III-17
Home Ownership by Poverty Level
NFG Territory Households with Gas Bills

County	Poverty Level	Ownership Status			
		Own		Rent	
		#	%	#	%
Clearfield, McKean, Elk, Potter, & Cameron Counties	≤ 150%	4,149	66%	2,161	34%
	151% - 200%	3,115	73%	1,136	27%
	> 200%	25,966	88%	3,450	12%
	Total	33,230	83%	6,747	17%
Crawford & Warren Counties	≤ 150%	2,677	61%	1,747	39%
	151% - 200%	1,956	73%	734	27%
	> 200%	15,931	84%	3,006	16%
	Total	20,564	79%	5,487	21%
Erie County	≤ 150%	6,967	44%	8,746	56%
	151% - 200%	4,779	67%	2,341	33%
	> 200%	51,069	85%	9,272	15%
	Total	62,815	76%	20,359	24%
Mercer County	≤ 150%	2,332	46%	2,730	54%
	151% - 200%	1,784	68%	846	32%
	> 200%	16,943	83%	3,576	17%
	Total	21,059	75%	7,152	25%
Venango, Jefferson, Clarion, & Forest Counties	≤ 150%	3,724	59%	2,634	41%
	151% - 200%	2,851	73%	1,048	27%
	> 200%	22,010	85%	3,813	15%

County	Poverty Level	Ownership Status			
		Own		Rent	
		#	%	#	%
Total		28,585	79%	7,495	21%

Table III-18, III-19, and III-20 display the housing unit type by poverty level for households with gas bills. More than half of the households in Pennsylvania live in a single-family detached home, while less than 15 percent live in small and large multifamily homes.

**Table III-18
Housing Type by Poverty Level
Pennsylvania Households with Gas Bills**

Poverty Level	Housing Type									
	Single-Family Detached		Single-Family Attached		Small Multifamily		Large Multifamily		Mobile Homes*	
	#	%	#	%	#	%	#	%	#	%
≤ 150%	163,357	41%	135,642	34%	54,876	14%	28,992	7%	14,602	4%
151% - 200%	97,200	51%	53,560	28%	18,681	10%	12,206	6%	7,622	4%
> 200%	1,296,999	65%	463,678	23%	119,862	6%	96,142	5%	30,160	2%
Total	1,557,556	60%	652,880	25%	193,419	7%	137,340	5%	52,384	2%

*The mobile home category includes a small number of building types classified as "Other" in ACS data, which encompasses housing types such as boats, RVs, and vans.

Table III-19 shows that NFG territory has a higher proportion of single-family detached homes compared to the rest of the state and a lower proportion of single-family attached homes and large multifamily residences.

Table III-19
Housing Type by Poverty Level
Pennsylvania Households with Gas Bills

Geographic Area	Poverty Level	Housing Type									
		Single-Family Detached		Single-Family Attached		Small Multifamily		Large Multifamily		Mobile Homes*	
		#	%	#	%	#	%	#	%	#	%
NFG Territory	≤ 150%	23,738	63%	1,162	3%	6,632	18%	2,422	6%	3,913	10%
	151% - 200%	15,941	77%	547	3%	1,769	9%	501	2%	1,832	9%
	> 200%	134,727	87%	3,795	2%	7,576	5%	2,404	2%	6,534	4%
	Total	174,406	82%	5,504	3%	15,977	7%	5,327	2%	12,279	6%
Outside NFG Territory	≤ 150%	139,619	39%	134,480	37%	48,244	13%	26,570	7%	10,689	3%
	151% - 200%	81,259	48%	53,013	31%	16,912	10%	11,705	7%	5,790	3%
	> 200%	1,162,272	63%	459,883	25%	112,286	6%	93,738	5%	23,626	1%
	Total	1,383,150	58%	647,376	27%	177,442	7%	132,013	6%	40,105	2%

*The mobile home category includes a small number of building types classified as "Other" in ACS data, which encompasses housing types such as boats, RVs, and vans.

Table III-20 shows that more than 80 percent of households in all counties in NFG's service territory reside in single-family detached homes, except in Erie County, where 77 percent of households reside in single-family detached homes.

Table III-20
Housing Type by Poverty Level
NFG Territory Households with Gas Bills

County	Poverty Level	Housing Type									
		Single-Family Detached		Single-Family Attached		Small Multifamily		Large Multifamily		Mobile Homes*	
		#	%	#	%	#	%	#	%	#	%
Clearfield, McKean, Elk, Potter, & Cameron Counties	≤ 150%	4,669	74%	118	2%	325	5%	139	2%	1,059	17%
	151% - 200%	3,479	82%	80	2%	228	5%	36	1%	428	10%
	> 200%	26,271	89%	300	1%	957	3%	48	<1%	1,840	6%
	Total	34,419	86%	498	1%	1,510	4%	223	1%	3,327	8%
Crawford & Warren Counties	≤ 150%	2,933	66%	70	2%	752	17%	150	3%	519	12%
	151% - 200%	2,015	75%	37	1%	379	14%	6	<1%	253	9%
	> 200%	16,525	87%	269	1%	1,089	6%	231	1%	823	4%
	Total	21,473	82%	376	1%	2,220	9%	387	1%	1,595	6%
Erie County	≤ 150%	8,533	54%	678	4%	4,069	26%	1,275	8%	1,158	7%

County	Poverty Level	Housing Type									
		Single-Family Detached		Single-Family Attached		Small Multifamily		Large Multifamily		Mobile Homes*	
		#	%	#	%	#	%	#	%	#	%
	151% - 200%	5,102	72%	313	4%	926	13%	242	3%	537	8%
	> 200%	50,795	84%	2,134	4%	3,949	7%	1,543	3%	1,920	3%
	Total	64,430	77%	3,125	4%	8,944	11%	3,060	4%	3,615	4%
Mercer County	≤ 150%	2,940	58%	183	4%	829	16%	571	11%	539	11%
	151% - 200%	2,126	81%	111	4%	93	4%	162	6%	138	5%
	> 200%	17,986	88%	792	4%	602	3%	452	2%	687	3%
	Total	23,052	82%	1,086	4%	1,524	5%	1,185	4%	1,364	5%
Venango, Jefferson, Clarion, & Forest Counties	≤ 150%	4,663	73%	113	2%	657	10%	287	5%	638	10%
	151% - 200%	3,219	83%	6	<1%	143	4%	55	1%	476	12%
	> 200%	23,150	90%	300	1%	979	4%	130	1%	1,264	5%
	Total	31,032	86%	419	1%	1,779	5%	472	1%	2,378	7%

*The mobile home category includes a small number of building types classified as “Other” in ACS data, which encompasses housing types such as boats, RVs, and vans.

Energy Characteristics

This section provides information on the energy characteristics of households in Pennsylvania and in NFG’s service territory. Table III-21, III-22, and III-23 show the main heating fuel by poverty level among households with gas bills. Natural gas is the most common main heating fuel statewide, with 85 percent of all households using it. There is little variation among income tiers.

**Table III-21
Main Heating Fuel by Poverty Level
Pennsylvania Households with Gas Bills**

Poverty Level	Main Heating Fuel					
	Natural Gas		Electricity		Other	
	#	%	#	%	#	%
≤ 150%	331,782	83%	38,148	10%	27,539	7%
151% - 200%	159,739	84%	14,430	8%	15,100	8%
> 200%	1,705,022	85%	166,895	8%	134,924	7%
Total	2,196,543	85%	219,473	8%	177,563	7%

Table III-22 shows that households in NFG’s service territory are more likely to use natural gas as their main heating fuel and less likely to use electricity, compared to the rest of the state. There is not much variation between income tiers.

Table III-22
Main Heating Fuel by Poverty Level
Pennsylvania Households with Gas Bills

Geographic Area	Poverty Level	Main Heating Fuel					
		Natural Gas		Electricity		Other	
		#	%	#	%	#	%
NFG Territory	≤ 150%	33,917	90%	1,829	5%	2,121	6%
	151% - 200%	18,629	90%	458	2%	1,503	7%
	> 200%	140,373	91%	5,918	4%	8,745	6%
	Total	192,919	90%	8,205	4%	12,369	6%
Outside NFG Territory	≤ 150%	297,865	83%	36,319	10%	25,418	7%
	151% - 200%	141,110	84%	13,972	8%	13,597	8%
	> 200%	1,564,649	84%	160,977	9%	126,179	7%
	Total	2,003,624	84%	211,268	9%	165,194	7%

Table III-23 shows variation between counties in NFG's service territory and between income tiers within the NFG counties. Erie County has the highest proportion of households using natural gas as their main heating at 94 percent, while Clearfield, McKean, Elk, Potter, and Cameron Counties have the lowest proportion of households using natural gas as their main heating fuel at 82 percent. In Clearfield, McKean, Elk, Potter, and Cameron counties, low-income households are less likely to use natural gas as their main heating fuel than higher-income households.

Table III-23
Main Heating Fuel by Poverty Level
NFG Territory Households with Gas Bills

County	Poverty Level	Main Heating Fuel					
		Natural Gas		Electricity		Other	
		#	%	#	%	#	%
Clearfield, McKean, Elk, Potter, & Cameron Counties	≤ 150%	4,831	77%	374	6%	1,105	18%
	151% - 200%	3,606	85%	45	1%	600	14%
	> 200%	24,356	83%	1,051	4%	4,009	14%
	Total	32,793	82%	1,470	4%	5,714	14%
Crawford & Warren Counties	≤ 150%	4,002	90%	136	3%	286	6%
	151% - 200%	2,414	90%	100	4%	176	7%
	> 200%	16,956	90%	706	4%	1,275	7%
	Total	23,372	90%	942	4%	1,737	7%
Erie County	≤ 150%	14,699	94%	823	5%	191	1%

County	Poverty Level	Main Heating Fuel					
		Natural Gas		Electricity		Other	
		#	%	#	%	#	%
	151% - 200%	6,644	93%	98	1%	378	5%
	> 200%	56,539	94%	2,306	4%	1,496	2%
	Total	77,882	94%	3,227	4%	2,065	2%
Mercer County	≤ 150%	4,579	90%	286	6%	197	4%
	151% - 200%	2,396	91%	137	5%	97	4%
	> 200%	18,948	92%	1,047	5%	524	3%
	Total	25,923	92%	1,470	5%	818	3%
Venango, Jefferson, Clarion, & Forest Counties	≤ 150%	5,806	91%	210	3%	342	5%
	151% - 200%	3,569	92%	78	2%	252	6%
	> 200%	23,574	91%	808	3%	1,441	6%
	Total	32,949	91%	1,096	3%	2,035	6%

Table III-24 displays the mean annual gas bill by poverty level among households with gas heat. The average gas heat household in NFG territory has a \$1,247 annual gas bill, about \$200 less than the average Pennsylvania household. This difference is present at the county level as well, as every county in NFG’s service territory has a lower average gas bill than outside the territory. In NFG’s service territory, Mercer County has the lowest average annual gas bill and Clearfield, McKean, Elk, Potter, and Cameron counties have the highest average annual gas bill. (It is important to note that both the heating fuel and the bill amount are self-reported.)

Table III-24
Mean Annual Gas Bill by Poverty Level
Pennsylvania Households with Gas Heat

Geographic Area	Annual Gas Bill							
	Poverty Level						All	
	≤ 150%		151% - 200%		> 200%			
	Count	Mean Bill (\$)	Count	Mean Bill (\$)	Count	Mean Bill (\$)	Count	Mean Bill (\$)
NFG Territory	33,917	\$1,272	18,629	\$1,314	140,373	\$1,232	192,919	\$1,247
Clearfield, McKean, Elk, Potter, & Cameron Counties	4,831	\$1,391	3,606	\$1,445	24,356	\$1,414	32,793	\$1,414
Crawford & Warren Counties	4,002	\$1,326	2,414	\$1,509	16,956	\$1,225	23,372	\$1,272
Erie County	14,699	\$1,264	6,644	\$1,223	56,539	\$1,128	77,882	\$1,162
Mercer County	4,579	\$1,020	2,396	\$995	18,948	\$1,160	25,923	\$1,120

Geographic Area	Annual Gas Bill							
	Poverty Level						All	
	≤ 150%		151% - 200%		> 200%			
	Count	Mean Bill (\$)	Count	Mean Bill (\$)	Count	Mean Bill (\$)	Count	Mean Bill (\$)
Venango, Jefferson, Clarion, & Forest Counties	5,806	\$1,356	3,569	\$1,435	23,574	\$1,358	32,949	\$1,366
Outside NFG Territory	297,865	\$1,495	141,110	\$1,474	1,564,649	\$1,434	2,003,624	\$1,446
Pennsylvania	331,782	\$1,472	159,739	\$1,456	1,705,022	\$1,418	2,196,543	\$1,429

Table III-25 displays the mean group gas burden for Pennsylvania households with gas heat. This mean burden is calculated as the total gas energy bills within the geographic area divided by the total income of the geographic area. The PUC has developed gas burden targets of four percent for households with income below the FPL and six percent for households between 51 and 150 percent of the FPL². Low-income households in NFG's service territory have an average gas burden of 7.5 percent, compared to 9.0 percent for those outside of NFG's service territory.

Table III-25
Mean Gas Burden by Poverty Level
Pennsylvania Households with Gas Heat

Geographic Area	Gas Burden			
	Poverty Level			All
	≤ 150%	151% - 200%	> 200%	
NFG Territory	7.5%	3.8%	1.2%	1.6%
Clearfield, McKean, Elk, Potter, & Cameron Counties	7.9%	4.3%	1.5%	1.8%
Crawford & Warren Counties	6.8%	4.3%	1.3%	1.7%
Erie County	7.7%	3.7%	1.0%	1.4%
Mercer County	6.6%	3.1%	1.2%	1.5%
Venango, Jefferson, Clarion, & Forest Counties	7.8%	3.9%	1.4%	1.8%
Outside NFG Territory	9.0%	4.2%	1.1%	1.4%
Pennsylvania	8.9%	4.2%	1.1%	1.4%

² Before the revision in 2021, the gas burden targets were 5%-8% for households with income at or below 50 percent of the FPL, 7%-10% for households with income from 51 percent to 100 percent of the FPL, and 9%-10% for households with income from 101 percent to 150 percent of the FPL

C. Summary

This demographic study assessed the characteristics of households within NFG's service territory compared to Pennsylvania overall and provided a county-level analysis of household characteristics. This section provides a summary of findings based on the needs analyses conducted.

- **Household Poverty Level:** NFG's service territory has about the same concentration of low-income households as the rest of the state. Eighteen percent of households in NFG's service territory have income at or below 150 percent of the FPL and ten percent have income between 151 and 200 percent of the FPL. These households (combined) are eligible for LIURP services.
- **Vulnerable Households:** Households were identified as vulnerable if they had at least one member who was disabled, younger than six, or 65 years of age or older. About 59 percent of the households in NFG's service territory have a vulnerable member, compared to 55 percent outside of NFG's service territory. These households are most vulnerable to extreme temperatures and can achieve important health and safety benefits through weatherization.
- **Household Language:** NFG has proportionally more English-speaking households than Pennsylvania as a whole. While 96 percent of the households in NFG's service territory have English as their primary language, 85 percent outside of NFG's service territory have English as their primary language. This makes it easier for NFG to provide LIURP services to their customers.
- **Home Ownership:** Overall, 78 percent of households in NFG's service territory own their homes and 52 percent at or below 150 percent of the FPL own their homes. Renters are typically more difficult to serve, as landlord permission is required for service delivery.
- **Housing Type:** Single-family detached homes are much more common in NFG territory compared to the rest of Pennsylvania. While 82 percent of households in NFG's service territory live in single-family homes, only 58 percent outside of NFG's service territory live in single-family homes. Even among households at or below 150 percent of the FPL, 63 percent live in single-family homes, another factor that makes NFG's customers more readily served by LIURP.
- **Energy Burden:** Households at or below 150 percent of the FPL within NFG's service territory who heat with natural gas have a mean group energy burden of 7.5 percent, compared to a mean group energy burden of 3.8 percent for those between 151 and 200 percent of the FPL. Reducing their energy usage and costs can help to alleviate these high energy burdens.

IV. LIURP Provider Research

APPRISE conducted in-depth telephone interviews with five Community Based Organizations (CBOs) and one independent contractor that provided Low-Income Usage Reduction Program (LIURP) services to National Fuel Gas customers. The goals of the interviews were as follows.

- Understand the challenges providers face in providing LIURP services to NFG customers.
- Assess how to increase service delivery.
- Learn about the health and safety barriers that are encountered, and the prevalence of those challenges.
- Research how coordination with other energy efficiency programs can be increased.
- Obtain providers' recommendations for the program.

The interviews focused on the following topics.

- Agency/Contractor Participation
- NFG LIURP Outreach and Participation
- LIURP Service Delivery
- Coordination with Other Energy Efficiency Programs
- NFG Support
- Future Opportunities for LIURP

NFG conducted initial outreach to the agencies/contractors to inform them of the interview request and APPRISE scheduled interviews by phone and email. The outreach attempts informed the contractors that they would be compensated with \$100 if they completed the interview.

APPRISE was able to complete interviews with all six LIURP providers. Completed interviews ranged in length from 50 to 90 minutes, with an average length of 66 minutes.

The following sections provides a summary of the findings from the six interviews with NFG LIURP service providers.

A. Agency and Contractor Participation

Service providers furnished detailed information regarding their roles in their respective agencies and how long they have been at that agency and role.

- **Role of Provider:** Providers interviewed were from diverse backgrounds and had different roles and responsibilities in their agencies. Of the nine providers from the six agencies interviewed, two were weatherization directors, two were auditors, one was a warehouse manager, one was an office manager, one was a program manager, one was a program coordinator, and one performed intake and invoicing. Five of the providers interviewed conduct field audits.
- **Length of Participation:** Most providers interviewed had been at their agency for several years except one. The service provider with the least amount of time at their

agency had been at their agency for two years, whereas the longest-serving provider had been there for 40 years. The mean length of participation among the nine interviewees was approximately 17 years.

- **Length in Current Role:** The service providers had been at their current role for periods ranging from only three months to 25 years. The mean amount of time in their current roles among the nine service providers interviewed was approximately ten years.

Service providers discussed their staffing and BPI certifications held within the organization.

- **Staff Members:** The number of staff members in the organization who perform work on NFG's LIURP ranged from three to 12 members, with an average of seven members. Two of the six agencies subcontract the crew work. Staff members providing NFG LIURP services in the agencies typically included auditors, inspectors, and office workers who help with intake and scheduling.
- **BPI Certifications:** All but one agency had staff members who were BPI-certified. Most held the Building Analyst certification, followed by Energy Auditor certification. Some had Quality Control Inspector, Building Analyst Technician, Building Analyst Professional, and Air Leakage Control Installer certifications.

Service providers shared information regarding the need for additional staff and current challenges in hiring.

- **Need for Additional Staff:** Four of the six agencies expressed the need for additional staff members to help them provide NFG LIURP services. Three of the four agencies that expressed a need for additional staff members were actively searching for qualified candidates to bring onto their teams, and one of the four expressed financial concerns regarding hiring an additional member despite the need.
- **Hiring Challenges:** All three agencies who were actively searching for candidates described challenges that they faced. These included finding qualified candidates, lack of response, background check failures, and drug screening failures. One agency expressed that applicants seemed to be applying just to fulfill job-seeking requirements for unemployment benefits. Another agency stated that they face these challenges for all the programs they operate.

B. LIURP Outreach and Participation

The service providers interviewed discussed the methods and procedures used to contact potential LIURP participants.

- **Contact Methods:** All six agencies used phone calls and letters or postcards to reach out to customers. At minimum, two phone calls and one letter were used. Three agencies made home visits on occasion and two agencies distributed flyers and left door hangers.

- Two agencies specified that they follow the contract guideline provided by NFG for the number of contact attempts, which is three phone calls and two letters. One agency mentioned CAP sends out cards, mailings, and door knockers, but that is not successful.
- One agency reported that they make two calls and then send a letter. The agency also conducts “drive-byes” where they knock on doors of customers and leave flyers if they do not get a response. The agency noted that most of the time, they do not get a response.
- One agency reported that they make calls and then leave a message. Then they send a letter, make a call, and send another letter. Then the agency will send someone to the house who leaves the NFG door hanger. The interviewee noted that the agency’s letter receives a better response than NFG’s letter since the agency provides more detailed information about the program and the measures it can provide. The agency also expressed that letters prompt more responses than showing up at the house or leaving door hangers.
- One agency said that they start with a phone call and leave messages, and then they send a form letter. The agency also mentioned that mailing letters has a better response compared to calling and leaving messages.
- One agency noted that they call customers and follow up with a postcard, after which NFG sends the customers a letter. The agency also said that they occasionally knock on the doors of CAP customers if they are in the area.

(NFG notes that providers are expected to make at least four calls; two calls before a letter is sent and two calls after the letter is sent.)

- **Response Rates:** The six agencies reported how often they are able to reach customers by phone. The response rate ranged from five percent to 50 percent with an average of 23 percent. One agency reported that letters receive a higher response rate (20 percent) compared to their outreach to customers via phone (eight percent).
- **NFG Outreach Impact:** NFG began calling customers at the end of 2023 to inform them about LIURP prior to sending their information to the contractors. Three of the six agencies noticed a positive impact from NFG calling customers before sending referrals out to the agencies.
 - One of the three agencies who noticed a difference said that three customers contacted them and said they received a letter from NFG.
 - One agency said that about two in twenty customers mentioned a phone call from NFG customer service and approximately one in twenty state that they received a letter from NFG.
 - The third agency noted that NFG customer service often calls the agency during customer intake for a “three-way call” when customers call regarding the Neighbor for Neighbor program and could qualify for LIURP. (NFG notes that Neighbor for Neighbor recipients are screened for LIURP.)
 - On the other hand, a service provider who had not noticed a difference yet stated that the difference might be more noticeable in the future.

- Another service provider said that they do not recall NFG doing outreach. The service provider specified that they are going through structural changes in the department and have not been reaching out to customers on behalf of NFG in the last few months.

Service providers shared information about their 2023 NFG LIURP service delivery goals compared to the number of jobs they completed. One of the six agencies exceeded their goal and five of the six completed fewer jobs than planned.

The table below summarizes the goals and number of jobs completed by providers. The number of NFG LIURP jobs completed by the providers in 2023 ranged from one to forty. Four agencies said that NFG wanted them to do one job per month or 12 jobs in a year. Of these four agencies with the goal of 12 completed jobs in a year, the average number of completed jobs was about seven in 2023. One agency stated that NFG did not provide a specified job completion target and one agency noted that they completed 40 jobs and NFG would like them to do more, but completing additional jobs is not possible for them.

Table IV-1
NFG LIURP Goals and Jobs Completed by Agencies and Contractors

Provider	2023 LIURP Goal	2023 Jobs Completed
1	12	1
2	N/A	3
3	12	7
4	12	8
5	12	13
6	N/A	40

The agencies that did not meet their job completion goals attributed it to staffing issues. The following specifics were noted.

- Need for additional staff members
- Staff transition within the agency
- Delays by NFG furnace clean and tune subcontractors
- Customer refusals
- Major barriers that caused deferrals

The agency that exceeded their 2023 goal stated that they may not be able to do so in 2024 since the budget is the same as 2023, but material prices have increased. (NFG notes that LIURP contracts were renewed in January 2024 and budgets were increased.)

When asked about barriers to serving more customers, service providers discussed the following key issues.

- **Customer Outreach:** Three of the six service providers said that customer outreach is an issue. They noted that customer awareness is low, customers do not respond to outreach, refusals are very common, and that customers are skeptical of the program.
- **Budgetary Difficulties:** One service provider said that increasing prices caused a challenge. The service provider stated that they depleted their NFG LIURP budget toward the end of the last three-year cycle but received additional funds from NFG to complete jobs.
- **NFG Clean and Tune Work Delays:** One service provider mentioned delays in the clean and tune work. (NFG notes that this was addressed with the provider that was experiencing delays, and the issue has been resolved.)
- **Time Commitments:** Service providers said that they had to prioritize WAP because they need to spend their allocated funds to continue receiving funding from the State. Five agencies reported that State WAP goals increased in 2023. The increase in State goals has impacted their ability to do other programs.

Service providers recommended methods for NFG to increase LIURP participation.

- **Improved Marketing:** Four service providers recommended improved marketing and outreach. (NFG notes that they have significantly increased their outreach and marketing efforts.)
 - They discussed the use of pamphlets and email blasts.
 - One suggested adding information to NFG's letters on the measures provided by the program.
 - One agency noted that Penn Power provides the agency a customer list with email addresses. The agency uses the list to email the customers with the agency's logo attached. The agency suggested that NFG could provide customers' emails so that they could send customers information about LIURP and the types of measures they can install.
- **Landlord Outreach:** Two service providers recommended that NFG contact landlords to get their approval. One service provider recommended emphasizing that renters are eligible for the program with the approval of their landlords since the letter mailed by NFG does not specify this.
- **Mobile Homes:** Two service providers suggested that NFG provide services to mobile home occupants.
- **Gas Usage Requirements:** Two service providers recommended that NFG lower the gas usage requirements. (NFG notes that they have lowered the consumption threshold through their LC-LIURP Pilot.)

C. LIURP Barriers

The service providers were asked about the following issues as barriers that prevent comprehensive service delivery in NFG customers' homes.

- *Mold and Moisture*
 - One agency said they see mold and moisture 75 percent of the time, two said 50 percent, and one said 25 percent. One service provider said they see it “on a regular basis,” and another said they do not see mold and moisture issues often.
 - One agency said that they usually find moisture issues in the home and foundation or roof leaks. Another agency said that roof leaks are a common barrier in homes, and mold and moisture issues are “more common than not.” Another agency mentioned that moisture is the most frequent issue they find in homes.
 - Two service providers stated that the agency does not address mold and moisture issues. One of the two said that they are unsure of NFG’s guidelines regarding mold and moisture issues. The other service provider said that they ask the customer to remediate such issues.

- *Knob and Tube Wiring*
 - One agency said they see Knob and Tube wiring issues in 60 percent of their jobs. Two service providers said they see this 30 to 40 percent of the time and another two said 10 to 15 percent. One service provider mentioned they do not see this issue often.
 - One service provider said that they resolve Knob and Tube wiring barriers by coordinating with other utilities or State Weatherization.
 - One agency noted that the NFG LIURP program does not allow for Knob and Tube wiring removal. The agency believes the reason for this is the cost to remediate.

- *Asbestos*
 - One agency said that they see asbestos in 20 to 30 percent of homes. One service provider estimated they see asbestos in five percent of homes, and another said they see asbestos in one percent of homes. One agency said they see asbestos in NFG customers' homes “on occasion” while two service providers said that they do not see this issue often.
 - One service provider said that asbestos is a frequent barrier in the NFG homes they service.
 - Five of the six service providers said that they do not see this issue often. One of the five agencies that do not find asbestos issues often said that it is usually contained, not exposed and since the agency is not disturbing it, it is not a barrier. Another agency stated that sometimes they do see asbestos painting on duct work, but they can work around that. One agency said they were unsure of program guidelines regarding asbestos.

- *Inaccessible Attics*
 - Four of the six agencies noted that inaccessible attics are not an issue since they can create access by cutting into the attic.

- One agency said they see inaccessible attics on occasion. Another service provider said they rarely see inaccessible attics, in three to five percent of jobs. Three agencies said they do not see inaccessible attics often, and one provider estimated approximately one to two percent of jobs. One service provider said they never see inaccessible attics.
- *NFG Data:* NFG’s cancellation and deferral data show rates for all health and safety issues are much lower, ranging from four percent in 2021 and 2023 to ten percent in 2022 over the four-year period from 2021 to 2024.

Other barriers reported by the service providers included the following.

- Landlord refusals
- Health and safety issues that are unaddressed by the program
- Unsanitary conditions like clutter or pet feces
- Tight crawlspaces and knee wall attics
- Itchy fiberglass
- Major repairs that may be beyond the scope of the program like roof leaks or missing ceilings.

Service providers spoke about the health and safety measures that they implement to overcome barriers.

- *Moisture Remediation:* Three of the six agencies install vents, bath fans, and vapor barriers to alleviate moisture issues.
- *Program Coordination:* Two of the six agencies coordinate services with other programs or utilities such as Penn Power, Penelec, WAP, or Department of Energy Work Ready Program to help address the health and safety concerns in customers’ homes.
- *Do Not Address:* One agency said that they do not install any measures since most health and safety issues are beyond the scope of the program and there is a lack of set standards. (NFG notes that they review health and safety protocols periodically and have a set health and safety budget.)

Four of the six agencies reported that they are still able to complete services or measures if there are barriers not addressed by the program. The measures that can be completed include bath and attic venting, dryer venting, vapor barriers, carbon monoxide detectors, smoke detectors/alarms, weather stripping, and insulation.

The service providers also discussed NFG’s repairs and health and safety budget.

- Four of the six agencies expressed no issues with NFG’s budget for repairs and health and safety. One service provider noted that having a “three-year budget is helpful” and

one service provider said that if additional funds were needed, the program manager is usually able to provide it.

- Two of the agencies said that they were unsatisfied with NFG's budget for repairs and health and safety since it is inadequate for issues they see on a regular basis. These two agencies also provided recommendations for the repairs and health and safety budgets.
 - One recommendation was to allocate a percentage of the total budget for the job to health and safety. For example, an additional 50 percent of the job funds for health and safety measures or 18 percent of the estimated job budget.
 - Another suggestion was to allocate a percentage of the entire budget, for example 15 percent of \$100,000 since some jobs do not need any health and safety spendings and others need a lot of funding. (NFG notes that no contractors expressed concern when NFG asked whether they had any issues with their health and safety and incidental repair budgets.)

All six agencies reported that they ask customers to call them once they have addressed barriers that prevented LIURP service delivery.

- Two service providers give customers the opportunity to address issues or suggest items to customers. A service provider said that they do not recall a customer ever addressing issues or contacting NFG. The second service provider mentioned that customers rarely make repairs.
- Two agencies said they need customer remediation in five to ten percent of jobs. One agency estimated that customers remediate about 50 percent of the time.
- One agency said that such remediation is needed in approximately 50 percent of jobs, however, most customers never call back.
- Another service provider stated that they need customer remediation in 25 percent of jobs, however only about five percent remediate and call them back. They typically give the customer three months to address the issue and follow up with a letter.

Service providers discussed the missed opportunities for saving energy that result from the barriers they face in the installation of measures.

- **Air Sealing & Insulation:** Five agencies stated that air sealing and insulation often becomes a missed opportunity. This could be attributed to lack of access to certain areas, a lack of client participation, and customer clutter.
- **Health and Safety:** One agency stated that minor measures become missed opportunities if major measures are deferred. For example, measures that do not require combustion safety testing like minor weatherstripping become missed opportunities if the water tank and heater require combustion testing and they need to defer the job to NFG Emergency Repair Program. (NFG notes that municipal certification

requirements for HVAC may delay the energy efficiency measures, but weatherization is typically completed after the equipment repair or replacement.)

- HVAC Repairs: One agency reported HVAC repairs as a missed opportunity.
- Water Heaters: One service provider stated that water heaters are missed opportunities for energy savings.

The service providers interviewed furnished insights on specific measures that pose challenges.

- Air Sealing: Two service providers expressed that air sealing is a challenging measure. An agency said that air sealing is labor-intensive and not always cost-effective to install. One agency discussed that moisture issues in homes make air sealing challenging.
- Moisture Remediation: Two service providers stated that moisture remediation measures were a challenge. One service provider said that moisture remediation is a barrier to the delivery of other measures.
- Weatherization: One agency noted that typical weatherization measures in attics, basements, and garages are challenging since customers tend to store a lot of items there.
- Health and Safety: One agency said that some health and safety repairs are restricted in rental properties. For example, furnaces cannot be replaced for tenants. Another service provider stated that tuck-under garages provide concerns with carbon monoxide.

D. Coordination with other Energy Efficiency Programs

The service providers discussed NFG LIURP coordination with other programs.

- Weatherization Assistance Program: Five of the six service providers stated that they coordinate jobs with the State Weatherization Assistance Program.
 - One agency said they coordinate 15 percent of jobs.
 - Three others said coordination happens around four to six times a year.
 - One service provider noted that they barely coordinate jobs with State WAP since State WAP installs the same measures as NFG.
- Penelec LIURP: Four of the six agencies stated that they coordinate jobs with Penelec LIURP.
 - One agency said they coordinate NFG jobs with Penelec LIURP “very often.” They use Penelec’s health and safety budget if the customer’s seasonal electric usage is high enough, NFG’s free clean and tune, and then install major measures for both programs.

- Another agency said they coordinate 15 percent of NFG LIURP jobs with Penelec LIURP.
- An agency mentioned that they do not coordinate with Penelec often, “about one in twenty jobs,” due to NFG’s usage requirements. (NFG notes that their usage threshold was lowered with their LC-LIURP Pilot.)
- Another service provider said that they coordinate four to five jobs a year with Penelec LIURP. The agency also noted that they often try to “triple coordinate” and see four to five triple coordinated jobs a year.
- One agency reported that their Penelec goal has increased dramatically to more than 100 jobs, which the agency was unable to meet. Penelec has implemented new auditing and testing requirements as well as ASHRAE 62.2 mechanical ventilation without addressing the need for increased pricing, adding a strain on the agency.
- Penn Power LIURP: Two of the six agencies coordinate NFG jobs with Penn Power LIURP.
 - One service provider said that coordination happens about six times a year.
 - Another provider reported coordinating four to five jobs a year with Penn Power LIURP.

Other programs that LIURP service providers coordinate NFG jobs with are Department of Energy CRISIS, Neighbor for Neighbor, an electric co-op, and State Whole Home Program.

The service providers furnished detailed information regarding the barriers to coordination.

- Usage Requirement: Five service providers stated that NFG’s minimum usage requirement is a barrier to coordinating jobs. (NFG notes that the usage threshold has been lowered with their LC-LIURP Pilot.)
 - Four of the five stated that NFG’s gas usage requirement is the barrier, while one service provider reported that Penelec’s LIURP kWh requirement is a barrier.
 - One stated that when Penelec coordinates with the State Weatherization Assistance Program, Penelec drops their usage requirement.
 - Another agency echoed this and noted that Penelec and Penn Power will not require an electric usage minimum if the job is coordinated with the State or a gas company.
- Waiting Lists: One agency stated that the State Weatherization Assistance Program has a waiting list that hinders coordination. They are unable to move customers within the State WAP waiting list and hence must move NFG customers up to match those on the State WAP list.
- Usage Data: One service provider said that they do not have access to customers’ gas usage and that is a barrier. The service provider elaborated that they could obtain usage information by calling NFG or getting utility bill information from the customer. (NFG notes that this information is available upon request with customer consent.)

- **Prior Participants:** One service provider expressed that services for repeat customers are a barrier to coordination. The service provider said that the State Weatherization Assistance Program does not allow customers to be re-served within 15 years. For Penelec and Penn Power customers, the time limit for providing services again is five years.

Other barriers noted by the service providers were extra paperwork associated with coordinated jobs, customers having their gas and electric accounts under different names, and customers submitting expired IDs during the LIURP application process.

E. NFG Support

Five of the six providers expressed satisfaction with the support provided by NFG. All agencies provided feedback on additional support that would be helpful for them.

- **Guidelines:** Two agencies noted that they would like more guidelines or procedures. The agencies recommended having specific guidelines, such as the “dos and don’ts” of how to proceed when faced with certain issues. An agency said that they had manuals for Penelec’s LIURP and WAP. Both manuals include sections on health and safety, and Penelec’s manual has a “barriers” section that provides suggestions on how to resolve problems. When in doubt, the agency uses these procedures or calls NFG. (NFG notes that they are always available to field questions from providers.)
- **NFG Customer Service Training:** One agency reported that more training should be provided to NFG customer service staff about LIURP since customers are not aware of the program or the type of services it can provide. (NFG notes that customer service representatives receive detailed training.)
- **Contractor IDs:** One service provider said that it would be helpful for NFG to provide IDs to auditors and technicians since customers often tend to be wary. The service provider said that the letter mailed by NFG specifies the agency that will service the customer and the agency provides shirts and truck signs, but most customers do not read the letter.
- **Payment Terms:** One agency recommended investigating shorter payment terms. They stated that NFG’s current payment term is 30 days. During December, they are busy handling end-of-year reporting tasks, and hence are unable to issue invoices for 15 days, which delays payment further.
- **Customer Information:** One service provider said an increased ability to get information electronically from NFG, including demographics, job tracking, and invoices would be helpful. Currently, NFG requires the agencies to use faxes and U.S. Mail to send invoices. The service provider elaborated that going to the Post Office, obtaining postage, and making hard copies of job invoices is a slow process. (NFG notes that they have set up a secure email option and are exploring other secure data sharing methods.)

- **Email System:** One service provider stated that the agency is dissatisfied with NFG's new secure e-mail system since it "adds another level of complication and frustration" to their work. The agency stated that they can no longer send jobs back and forth through email. Another service provider echoed this dissatisfaction stating that at least one employee at their agency has issues opening NFG emails because of the extra steps required. They recommend that NFG investigate technologies used by other utilities and set up a secure portal for communication that utilizes two-party authentication.
- **Health and Safety Funds:** One service provider said that health and safety funds would be helpful. (Note: The service provider was not aware that NFG has a set budget for health and safety.)

F. Future Opportunities for LIURP

Service providers furnished recommendations on how NFG can reach more customers.

- **Marketing:** Three agencies recommended that NFG focus on marketing to reach more customers. (NFG notes that they have employed all of these strategies except billboards and email blasts.)
 - **Social media:** Two agencies recommended employing social media to advertise the program.
 - **Bill Inserts:** Two service providers recommended employing bill inserts as a means to market LIURP. One agency said that NFG could partner with other organizations and put LIURP ads in their advertisements. The agency gave an example of NFG LIURP advertisements on cable bills that state the customer could be more comfortable watching TV and save money by participating in LIURP.
 - **Brochure Distribution:** One service provider said that NFG could also provide brochures about the program to other social service agencies, churches, grocery stores, and other places where customers congregate.
 - **Messaging:** One agency said that NFG could employ catch messages or tag lines such as, "Is your home cold in the winter?."
 - **Billboards:** One agency suggested putting up advertisements on billboards.
 - **Email Blasts:** One agency noted that more mass marketing such as email blasts could be helpful.
- **CAP Participants:** Three service providers proposed obtaining referrals during CAP calls and mandating LIURP participation for CAP customers. (NFG notes that they do screen CAP participants for LIURP but do not enforce their participation requirements as they are actively working to increase CAP participation.)
 - One service provider recommended obtaining referrals for LIURP when customers call in for CAP. The service provider said that this referral process worked successfully for the Neighbor for Neighbor program.
 - Two agencies said that NFG should require CAP customers to participate in LIURP. They followed up by saying that this has worked well for other utilities, however since COVID, they have noticed customers do not follow this requirement and utilities do not enforce it.

- Program Guidelines: One service provider suggested altering program guidelines to reach more customers.
 - They recommended that NFG should lower their usage requirements.
 - The agency also stressed the inclusion of mobile homes since there is a lot of potential with mobile homes, and the agency has experience addressing mobile homes with other programs.

- Customer Information: One service provider expressed that NFG could provide the agency with customer information needed for the initial LIURP application such as customer name, address, usage, and phone number. The service provider also recommended that NFG inform the agency if the customer qualifies for LIHEAP and share the customer's income information, that the agency would then verify. (NFG notes that they already provide customer information with referrals and will review whether LIHEAP recipients continue to need income verification for LIURP.)

V. LIURP Participant and Nonparticipant Research

APPRISE conducted surveys with National Fuel LIURP participants and nonparticipants. This section provides information on the survey methodology, findings, and recommendations based on this research.

A. Methodology

This section provides information on the survey sample, implementation, and response.

Surveys were conducted with NFG customers who participated in LIURP and with customers who declined to participate or did not respond to outreach attempts.

- *LIURP Participants*: NFG provided data on the 247 customers who participated in LIURP in 2021, 2022, and 2023. After dropping 36 inactive accounts, the final sample included 211 customers who received LIURP services.
- *LIURP Nonparticipants*: NFG provided data on 1,133 customers who declined to participate in LIURP. After dropping three customers included in the participant file and 362 inactive customers, the final sample included 768 NFG customers who were contacted about LIURP participation but did not proceed with LIURP services.

The surveys were conducted via a mixed-mode web/telephone approach in April and May 2024. Outreach to the participant sample was conducted in the following manner, summarized in Table V-1.

- **Advance Letter**: Customers were sent an advance letter on 3/20/24 that included a \$5 bill, explained the purpose of the survey, provided the link to complete the web survey, notified them that they would be called to complete the survey, and provided the option to call a toll-free number to complete the survey at their convenience.
- **Email #1**: Customers were sent an email with the same information as the advance letter on 3/22/24.
- **Email #2**: Customers were sent a second email with the same information on 3/27/24.
- **Outbound Calling**: Outbound calls were made to all selected customers who had not responded online beginning on 3/28/24. Calls were made during the day, evening, and weekends.
- **Email #3**: Customers were sent a third email with the same information on 4/5/2024.
- **Email #4**: Customers were sent a final email on 4/19/2024.
- The participant survey was closed on 4/22/2024.

Outreach to the nonparticipant sample was conducted in the following manner, summarized in Table V-1.

- **Advance Letter**: Customers were sent an advance letter on 4/4/24 that included a \$5 bill, explained the purpose of the survey, provided the link to complete the web survey, notified them that they would be called to complete the survey, and provided the option to call a toll-free number to complete the survey at their convenience.

- Email #1: Customers were sent an email with the same information as the advance letter on 4/5/24.
- Outbound Calling: Outbound calls were made to all selected customers who had not responded online beginning on 4/11/24. Calls were made during the day, evening, and weekends.
- Email #2: Customers were sent a second email with the same information on 4/12/2024.
- Email #3: Customers were sent a final email on 5/3/2024.
- The nonparticipant survey was closed on 5/6/2024.

**Table V-1
Participant and Nonparticipant Survey Outreach**

Contact Method	Participant Survey	Nonparticipant Survey
First Advance Letter	3/20/2024	4/4/2024
First Advance Email	3/22/2024	4/5/2024
Survey Calling Implementation	3/28/2024	4/11/2024
Second Advance Email	3/27/2024	4/12/2024
Third Advance Email	4/5/2024	-
Final Advance Email	4/19/2024	5/3/2024
Survey Calling Terminated	4/18/2024	5/3/2024
Survey Closed	4/22/2024	5/6/2024

A 61 percent response rate was achieved for the LIURP participants and a 38 percent response rate was achieved for the LIURP nonparticipants.

- LIURP Participants: Surveys were completed with 114 LIURP participants, 54 percent of the selected sample.
- LIURP Nonparticipants: Surveys were completed with 226 nonparticipants, 29 percent of the selected sample.

Table V-2 furnishes information on the final survey dispositions.

Table V-2
Survey Response

Survey Response Status	LIURP Participants		LIURP Nonparticipants	
	#	%	#	%
Total	211	100%	768	100%
Voicemail	59	28%	288	38%
No Answer/Busy Signal	14	7%	111	14%
Non-Working Number/Phone Problem	12	6%	57	7%
Refusal	5	2%	36	5%
Wrong Number	1	<1%	19	2%
Not Available	2	1%	14	2%
Language Barrier	2	1%	7	1%
Ineligible	2	1%	4	1%
Ill or Deceased	0	0%	6	1%
Complete	114	54%	226	29%
Survey Method				
Phone	50	44%	97	43%
Online	64	56%	129	57%
Cooperation Rate	-	95%	-	85%
Response Rate	-	61%	-	38%

B. Respondent Characteristics

This section provides information on the characteristics of LIURP participants and nonparticipants based on survey responses. Table V-3 shows that 80 percent of participants and 74 percent of nonparticipants reported that they own their homes.

Table V-3
Home Ownership

Do you rent or own your home?				
Home Ownership	Participants		Nonparticipants	
	#	%	#	%
Own	91	80%	167	74%
Rent	21	18%	56	25%
Don't Know	1	1%	1	<1%
Refused	1	1%	2	1%
Total	114	100%	226	100%

Table V-4 displays the primary language spoken at home. English is the primary language spoken by almost all of the households surveyed. Other languages were spoken in one percent or less of households include Spanish and Vietnamese.

**Table V-4
Primary Language**

What is the primary language spoken in your home?				
Language	Participants		Nonparticipants	
	#	%	#	%
English	113	99%	224	99%
Spanish	1	1%	0	0%
Vietnamese	0	0%	1	<1%
Refused	0	0%	1	<1%
Total	114	100%	226	100%

Table V-5 displays respondents' reported race and ethnicity. About 75 percent of participants and nonparticipants reported that they are white, and 11 percent reported that they are African American/Black.

**Table V-5
Race/Ethnicity**

Please share your race/ethnicity to help us understand the diversity of our program participants.				
Race / Ethnicity	Participants		Nonparticipants	
	#	%	#	%
White	85	75%	168	74%
African American/Black	13	11%	25	11%
Indigenous American/First Nations	3	3%	3	1%
African	3	3%	2	1%
Hispanic or Latino	2	2%	8	4%
Asian-American	0	0%	1	<1%
Caribbean American	0	0%	1	<1%
Refused	13	11%	26	12%
Total	114	100%	226	100%

Note: Respondents could select more than one response.

Table V-6 displays respondents' household size. The mean household size was 2.9 among participants, and 3.2 among nonparticipants.

**Table V-6
Number of Household Members**

Including yourself, how many people are living in your household?				
Household Size	Participants		Nonparticipants	
	#	%	#	%
1	28	25%	61	27%
2	28	25%	34	15%
3	15	13%	28	12%
4	19	17%	40	18%
5	13	11%	25	11%
6 or more	7	7%	28	12%
Don't Know	0	0%	1	<1%
Refused	4	4%	9	4%
Total	114	100%	226	100%
Mean	2.9		3.2	

Table V-7 displays the respondents' reported household income. Income among the participants and nonparticipants were distributed similarly, but nonparticipants were more likely to report that their income was between \$40,000 and \$60,000. Most customers reported that their annual income was between \$5,000 and \$40,000.

**Table V-7
Annual Household Income**

What is your annual or monthly household income?								
Annual Household Income	All Responses				Informed Responses ¹			
	Participants		Nonparticipants		Participants		Nonparticipants	
	#	%	#	%	#	%	#	%
Less than \$5,000	8	7%	8	4%	8	9%	8	4%
\$5,000 – \$19,999	33	29%	63	28%	33	36%	63	32%
\$20,000 – \$39,999	39	34%	77	34%	39	42%	77	39%
\$40,000 – \$59,999	5	4%	30	13%	5	5%	30	15%
\$60,000 or more	7	6%	17	8%	7	8%	17	9%
Don't Know	6	5%	8	4%	-	-	-	-
Refused	16	14%	23	10%	-	-	-	-
Total	114	100%	226	100%	92	100%	195	100%

¹ Percentages were recalculated with "Don't Know" and "Refused" options removed.

Table V-8 displays the respondents’ poverty levels. Excluding non-responses, just over half of program participants had income below the federal poverty level. Five percent of the nonparticipant respondents had income above 200 percent of the poverty level, but their income may have changed since the time they were recruited for LIURP.

**Table V-8
Poverty Level**

Poverty Level Developed Based on Response to Household Size and Income								
Federal Poverty Level	All Responses				Informed Responses ¹			
	Participants		Nonparticipants		Participants		Nonparticipants	
	#	%	#	%	#	%	#	%
<= 100%	47	41%	83	37%	47	52%	83	44%
101% - 150%	24	21%	62	27%	24	26%	62	33%
151% - 200%	20	18%	36	16%	20	22%	36	19%
> 200%	0	0%	9	4%	0	0%	9	5%
Don't Know	6	5%	9	4%	-	-	-	-
Refused	17	15%	27	12%	-	-	-	-
Total	114	100%	226	100%	91	100%	190	100%

Note: this table uses estimated household income based on self-reported income ranges.
¹ Percentages were recalculated with “Don’t Know” and “Refused” options removed.

Table V-9 displays statistics on nonparticipants’ home type. Most nonparticipants reported that they live in single-family homes.

**Table V-9
Home Type**

Which of the following best describes your home?		
Home Type	Nonparticipants	
	#	%
Single-Family	216	96%
Duplex	5	2%
Triple Decker	2	1%
Mobile Home or Trailer	2	1%
Apartment/Condo in a 2-4 Unit Building	1	<1%
Total	226	100%

Table V-10 displays statistics on the nonparticipants' home age. The table shows that most respondents live in homes built before 1960.

Table V-10
Home Age

When was your home built?		
Year Built	Nonparticipants	
	#	%
Before 1960	145	64%
1960-1979	20	9%
1980-1999	8	4%
2000-2009	3	1%
Don't Know	50	22%
Total	226	100%

Table V-11 displays statistics on nonparticipants' home square footage. While 46 percent of those did not know the square footage of their home, 29 percent said that it was between 1,000 and 1,999 square feet, and 17 percent said it was between 2,000 and 2,999 square feet.

Table V-11
Home Square Footage

About how many square feet is your home? If you are unsure, an estimate is OK.		
Home Size	Nonparticipants	
	#	%
Less than 1,000 Square Feet	10	4%
1,000-1,999 Square Feet	66	29%
2,000-2,999 Square Feet	38	17%
3,000-3,999 Square Feet	3	1%
4,000-4,999 Square Feet	4	2%
5,000 or Greater Square Feet	1	<1%
Don't Know	103	46%
Refused	1	<1%
Total	226	100%

Table V-12 displays statistics on nonparticipants' main water heater fuel. While 80 percent said they used natural gas, 15 percent said they used electricity.

Table V-12
Water Heating Fuel

What fuel does your main water heater use?		
Main Water Heating Fuel	Nonparticipants	
	#	%
Natural Gas	181	80%
Electricity	35	15%
Don't Know	10	4%
Total	226	100%

C. Program Knowledge and Participation

This section assesses LIURP knowledge and reasons for participation or nonparticipation. Table V-13 displays nonparticipant awareness of the program. The table shows that only 45 percent of nonparticipants reported that they had never heard of LIURP, and only 21 percent were aware that NFG or a contractor had tried to provide LIURP services in their home. Only 14 percent reported that they responded to the LIURP outreach.

Table V-13
Nonparticipant Program Awareness

Response	Have you heard of LIURP?		Do you know that NFG or a contractor tried to provide LIURP?		Did you respond to NFG or contractor outreach?	
	#	%	#	%	#	%
Yes	101	45%	47	21%	31	14%
No	103	46%	153	68%	10	4%
Don't Know	22	10%	26	12%	6	3%
Unaware of LIURP Outreach ¹	-	-	-	-	179	79%
Total	226	100%	226	100%	226	100%

¹ Only respondents who reported that they knew they were contacted were asked if they responded to outreach.

Table V-14 shows how respondents who were aware of LIURP had heard about the program. The most common source of information was through a community agency or social service organization, followed by a letter from NFG, and word of mouth.

Table V-14
LIURP Information Source

How did you first hear about National Fuel's LIURP program?				
Information Source	Participants		Nonparticipants	
	#	%	#	%
Community Agency/Organization	34	30%	21	9%
Letter/Mail from National Fuel	19	17%	17	8%
Word of Mouth	16	14%	10	4%
National Fuel General Outreach	13	11%	5	2%
Phone Call from National Fuel	7	6%	12	5%
Electric Utility	3	3%	0	0%
Email from National Fuel	1	1%	2	1%
Called in to National Fuel	1	1%	2	1%
Online/Social Media Advertisement	1	1%	1	<1%
Canvassing	1	1%	0	0%
NFG Website	0	0%	4	2%
Other	6	5%	2	1%
Don't Know	14	12%	26	12%
Refused	3	3%	1	<1%
Unaware of LIURP¹	-	-	125	55%
Total	114	100%	226	100%

Note: Respondents could select more than one response.

¹ Only respondents who reported having heard of LIURP were asked how they heard about it.

Table V-15 displays information on LIURP understanding. The table shows that 84 percent of participants and 26 percent of nonparticipants reported that they understand the program very well or somewhat well.

Table V-15
Understanding Of LIURP

How well would you say you understand or do not understand LIURP? Would you say that you understand it very well, somewhat well, not that well, or not at all?				
Program Understanding	Participants		Nonparticipants	
	#	%	#	%
Very Well	35	31%	22	10%
Somewhat Well	60	53%	37	16%
Not That Well	15	13%	30	13%
Not At All	1	1%	11	5%
Don't Know	2	2%	1	<1%
Refused	1	1%	0	0%
Unaware of LIURP¹	-	-	125	55%
Total	114	100%	226	100%

¹Only nonparticipants who reported that they heard of LIURP were asked how well they understood it.

Respondents who reported that they did not understand LIURP were asked what they did not understand about the program. Table V-16 shows that the most common areas they did not understand were the improvements that were made and the program overall. Other areas of confusion were program eligibility, expected energy savings, and how the installed equipment works.

Table V-16
Parts of LIURP Not Understood – Participants

What do you not understand about LIURP?		
Not Understood about LIURP	Participants	
	#	%
What Improvements Were Made to My Home	6	5%
General Program Information	5	4%
Program Eligibility	3	3%
What Energy Savings Are Expected and Why	3	3%
How Installed Equipment Works	2	2%
Don't Know	3	3%
Refused	1	1%

What do you not understand about LIURP?		
Not Understood about LIURP	Participants	
	#	%
Understood Program ¹	95	84%
Total	114	100%

Note: respondents could select more than one response.

¹Only respondents who reported not understanding LIURP were asked what they did not understand.

Table V-17 shows that nonparticipants, when asked what they did not understand about LIURP, were most likely to report that they did not understand the purpose of the program and the services provided through LIURP. Other areas not understood were eligibility, how to apply, and the cost of participation.

Table V-17
Parts of LIURP Not Understood – Nonparticipants

What do you not understand about LIURP?		
Not Understood about LIURP	Nonparticipants	
	#	%
Purpose of Program/Services Provided	18	8%
Everything	9	4%
Program Eligibility	6	3%
How to Apply	5	2%
Cost of Participation	4	2%
Don't Know	9	4%
Understood Program ¹	59	26%
Unaware of Program	125	55%
Total	226	100%

Note: Respondents could select more than one response.

¹Only respondents who reported knowing about LIURP and not understanding it were asked what they did not understand.

Table V-18 displays participants' responses when asked why they decided to enroll in LIURP. Table V-18 shows that 47 percent said they participated to reduce their energy bills, 32 percent said they participated because of the no-cost improvements, and 14 percent said they participated to improve affordability. Other motivations included improved comfort and improved air quality.

“To help reduce my gas bill, keep my house protected and ensure my kids are living in a safe environment.”

“If it would not be for this program, I would not know what to do because I would never be able to keep up with my gas bill.”

Table V-18
Reasons for Participation

Why did you decide to participate in National Fuel's LIURP program?		
Reason for Participating	Participants	
	#	%
Reduce Energy Bills	54	47%
No-Cost Improvements	37	32%
Improve Affordability	16	14%
Improve Home Comfort	9	8%
Improve Home Air Quality	2	2%
Other	7	6%
Don't Know	4	4%
Refused	1	1%
Total	114	100%

Note: Respondents could select more than one response.

Table V-19 displays nonparticipants' responses when asked why they did not participate in LIURP. The most frequent response was that they did not know why they did not participate in LIURP, representing 36 percent of responses. Other common responses were that they had not heard of the program (24 percent) or were ineligible or unsure if they met the eligibility criteria (14 percent). Less common responses were that they did not receive any follow-up communication, their landlord did not grant permission to participate, they did not finish or were unsure about their application, and they were unsure about the program and services provided.

**Table V-19
Reasons for Nonparticipation**

Why did you choose to not receive the services offered by the National Fuel LIURP program?		
Reason for Not Participating	Nonparticipants	
	#	%
Never Heard of LIURP	55	24%
Ineligible or Unsure of Eligibility	31	14%
No Follow-up	9	4%
Landlord Permission or Renter Eligibility	9	4%
Application Unfinished/Unsure	8	4%
Unsure about Program/Services	6	3%
Barriers to Weatherization	5	2%
Not Interested	5	2%
Scheduling Issue	4	2%
Improvements Not Needed	4	2%
Seemed too Difficult	2	1%
Weatherized from another Source	2	1%
Thought it was a Scam	1	<1%
Other	5	2%
Don't Know	81	36%
Refused	3	1%
Total	226	100%

Note: Respondents could select more than one response.

Table V-20 displays nonparticipants' responses when asked the best way to contact them about LIURP in the future. While 58 percent of respondents indicated that a letter was the best method of contact, 39 percent said phone calls were best and 35 percent said that emails were best.

**Table V-20
Best LIURP Contact Method**

Which of the following would be the best way to contact you about LIURP in the future?		
Best Contact Method	Nonparticipants	
	#	%
Letter	132	58%
Phone Call	88	39%
Email	80	35%

Which of the following would be the best way to contact you about LIURP in the future?		
Best Contact Method	Nonparticipants	
	#	%
Text Message	6	3%
Community Event	2	1%
Don't Know	1	<1%
Refused	2	1%
Total	226	100%

Note: Respondents could select more than one response.

D. Participation Challenges

This section provides information on the challenges faced by LIURP participants. Table V-21 shows that 14 percent of respondents experienced one or more challenges with the program. While four percent reported that they faced challenges scheduling an appointment, three percent said the contractor did not arrive on time, and one percent said they faced challenges getting the home ready for the appointment. Eleven percent said that they experienced other challenges, displayed in the following table.

**Table V-21
Challenges Faced by Participants**

Response	Challenges Faced by Participants									
	Scheduling Appointment		Getting Home Ready for Appointment		Contractor Arriving on Time		Other Challenges?		Any Challenges	
	#	%	#	%	#	%	#	%	#	%
Yes	5	4%	1	1%	3	3%	12	11%	16	14%
No	103	90%	108	95%	100	88%	97	85%	98	86%
Don't Know	5	4%	5	4%	10	9%	4	4%	-	-
Refused	1	1%	0	0%	1	1%	1	1%	-	-
Total	114	100%	114	100%	114	100%	114	100%	114	100%

Respondents were asked to describe the challenges they reported facing. Table V-22 shows that eight percent reported poor work quality, three percent reported that the work was not completed, and two percent reported challenges with the scheduling process and waiting to receive services.

“They could have cleaned up better and you can tell it was “free” for me by the overall look of the job.”

Table V-22
Description of Challenges Faced

Please describe the challenges that you experienced.		
Challenges Faced	Participants	
	#	%
Poor Quality of Work	9	8%
Incomplete Work	3	3%
Scheduling Process / Delay	2	2%
Other	1	1%
Don't Know	1	1%
Not Applicable¹	98	86%
Total	114	100%

¹ Only respondents who reported challenges with LIURP were asked to describe the challenges they faced.

E. Nonparticipant Home Characteristics

Nonparticipants were asked questions about their homes to assess potential ways that LIURP could improve their quality of life. When asked how frequently they experience noise from outside while windows are closed, 32 percent reported that they always hear noise from outside, 15 percent said that they frequently hear noise, and 30 percent said that they sometimes hear noise.

Table V-23
Outside Noise

Do you always, frequently, sometimes, seldom, or never notice noise from outside when your windows are closed?		
Prevalence of Outside Noise	Nonparticipants	
	#	%
Always	72	32%
Frequently	35	15%
Sometimes	67	30%
Seldom	25	11%
Never	22	10%
Don't Know	4	2%
Refused	1	<1%
Total	226	100%

Table V-24 shows that 16 percent of nonparticipants reported that the air quality in their home was somewhat unhealthy and seven percent said it was very unhealthy.

Table V-24
Home Air Quality

How healthy do you feel the air quality is in your home? Would you say it is very healthy, somewhat healthy, somewhat unhealthy, or very unhealthy?		
Air Quality	Nonparticipants	
	#	%
Very Healthy	44	19%
Somewhat Healthy	99	44%
Somewhat Unhealthy	37	16%
Very Unhealthy	15	7%
Don't Know	31	14%
Total	226	100%

Nonparticipants were asked how frequently they experience cold air entering the home or keep their home at an unsafe or unhealthy temperature during the winter months. Table V-25 shows that 58 percent reported that they always or frequently experience cold air entering their homes, and 13 percent reported that they always or frequently experience unsafe or unhealthy temperatures in their homes during the winter.

Table V-25
Winter Challenges

During the winter months, how often do you experience...				
Frequency	Cold Air Entering the Home		Unsafe or Unhealthy Temperatures	
	Nonparticipants		Nonparticipants	
	#	%	#	%
Always	83	37%	11	5%
Frequently	48	21%	19	8%
Sometimes	53	23%	30	13%
Seldom	21	9%	33	15%
Never	18	8%	125	55%
Don't Know	2	1%	8	4%
Refused	1	<1%	0	0%
Total	226	100%	226	100%

Nonparticipants were also asked how frequently they run their air conditioner or keep their home at an unsafe or unhealthy temperature during the summer months. Table V-26 shows

that 18 percent reported that they never run an air conditioner, and nine percent reported that they always or frequently have unsafe or unhealthy temperatures in their homes.

Table V-26
Summer Challenges

During the summer months, how often do you experience...				
Frequency	Run Air Conditioner		Unsafe or Unhealthy Temperatures	
	Nonparticipants		Nonparticipants	
	#	%	#	%
Always	70	31%	8	4%
Frequently	73	32%	11	5%
Sometimes	33	15%	46	20%
Seldom	10	4%	29	13%
Never	40	18%	116	51%
Don't Know	0	0%	16	7%
Total	226	100%	226	100%

F. LIURP Impact

This section provides LIURP participant responses to questions about the program's impact. Table V-27 shows that 49 percent of respondents said that their natural gas bills decreased after they participated in LIURP.

“Very thankful, for this program and all the free help I received, it helped me so much.”

Table V-27
Natural Gas Bills

Has your natural gas bill increased, decreased, or stayed the same since you received LIURP services?		
Gas Bill Change	Participants	
	#	%
Decreased	56	49%
Stayed the Same	30	26%
Increased	9	8%
Don't Know	18	16%
Refused	1	1%
Total	114	100%

Table V-28 shows that 75 percent of respondents reported that their home was more comfortable after they participated in LIURP.

“It has helped our family greatly. We had no insulation before. This winter my 3 young children – we are in a much warmer house.”

**Table V-28
Home Comfort**

Has your home been more comfortable, less comfortable, or stayed the same since you received LIURP services?		
Comfort Change	Participants	
	#	%
More Comfortable	85	75%
Stayed the Same	23	20%
Less Comfortable	2	2%
Don't Know	3	3%
Refused	1	1%
Total	114	100%

Table V-29 shows that 32 percent of respondents reported that their home air quality improved after they participated in LIURP.

**Table V-29
Home Air Quality**

Has your home's air quality improved, worsened, or stayed the same since you received LIURP services?		
Air Quality Change	Participants	
	#	%
Improved Air Quality	37	32%
Stayed the Same	57	50%
Worsened Air Quality	3	3%
Don't Know	16	14%
Refused	1	1%
Total	114	100%

Table V-30 displays other changes reported by LIURP participants. While 25 percent reported that the home temperature was more comfortable, 13 percent reported that the home was less drafty. Other changes reported

“I am very pleased and it has made a big difference in heating my home.”

“The guys that installed were very nice and perfect with the insulation. I told the guys at work about them and to look into it.”

include lower bills, reduced noise, and fewer pests. Only a few customers reported a higher energy bill, worse air quality, or drafts.

Table V-30
Other Changes in the Home

What other changes have you noticed in your home since you received LIURP services?		
LIURP Impacts	Participants	
	#	%
Temperature More Comfortable	28	25%
Less Drafts	15	13%
Lower Bill	5	4%
Reduced Noise	2	2%
Fewer Pests	2	2%
Higher Bill	2	2%
Worse Air Quality/Drafts	2	2%
Hot Water Temperature Improved	1	1%
Other	5	4%
Don't Know	17	15%
Refused	2	2%
No Other Changes	42	37%
Total	114	100%

Note: Respondents could select more than one response.

G. Participant Satisfaction

This section examines LIURP participant satisfaction and feedback for the program. Table V-31 shows that 69 percent of respondents reported that they received information from the contractor on energy reduction.

“I am just so very grateful to the people who came out and helped us make our home more comfortable and helped educate us on ways to help keep our usage low to help lower our bill.”

Table V-31
Contractor Information on Energy Reduction

Did the Contractor Provide Information on Energy Reduction?		
Response	Participants	
	#	%
Yes	79	69%
No	15	13%
Don't Know	20	18%
Total	114	100%

Table V-32 shows that most respondents were somewhat or very satisfied with different aspects of LIURP. While 91 percent were very or somewhat satisfied with the improvements, 92 percent were very or somewhat satisfied with the contractor, 68 percent were very or somewhat satisfied with the information on energy reduction, and 94 percent were very or somewhat satisfied with the program overall.

“I think the contractors went above and beyond. Extremely great experience.”

“I think it is one of the best programs I have ever participated in.”

“I absolutely loved the 2 contractors. They went above and beyond with help and explaining things. Kept me up to date and stayed in touch.”

“Everything was great and done in a timely manner. People I interacted with were very polite and did a good job.”

Table V-32
Satisfaction with Aspects of Program

How satisfied are you with...								
Level of Satisfaction	Improvements		Contractor		Information on Energy Reduction		LIURP Program	
	Participants		Participants		Participants		Participants	
	#	%	#	%	#	%	#	%
Very Satisfied	79	69%	86	75%	64	56%	87	76%
Somewhat Satisfied	25	22%	19	17%	14	12%	21	18%
Somewhat Dissatisfied	6	5%	3	3%	0	0%	2	2%
Very Dissatisfied	1	1%	2	2%	0	0%	1	1%
Don't Know	3	3%	4	4%	1	1%	3	3%
Not Applicable¹	-	-	-	-	35	31%	-	-
Total	114	100%	114	100%	114	100%	114	100%

¹Only respondents who reported their contractor provided energy reduction information were asked about their satisfaction with the information.

Of the few customers who were dissatisfied with the improvements, the most common complaint was the installation. Other sources of dissatisfaction were appearance and performance.

Table V-33
Dissatisfaction with Improvements

What about the LIURP improvements dissatisfied you?		
Reason for Dissatisfaction with Improvements	Participants	
	#	%
Installation	6	5%
Appearance	2	2%
Performance	1	1%
Refused	1	1%
No Dissatisfaction¹	107	94%
Total	114	100%

Note: Respondents could select more than one response.

¹Only respondents who reported dissatisfaction were asked why they were dissatisfied.

Only a few customers expressed dissatisfaction with the contractor. When asked for the reasons for this dissatisfaction, the customers stated that the contractor was rude or unprofessional, cancelled the visit, did not complete the work, or they were not satisfied with the work quality.

Table V-34
Dissatisfaction with Contractor

What about the contractor dissatisfied you?		
Reason for Dissatisfaction with Contractor	Participants	
	#	%
Contractor was rude/unprofessional	2	2%
Contractor canceled/did not complete work	2	2%
Quality of work	1	1%
No Dissatisfaction¹	109	96%
Total	114	100%

Note: Respondents could select more than one response.

¹Only respondents who reported dissatisfaction were asked why they were dissatisfied.

Table V-35 shows that a few customers were not satisfied with the program because they said that their bill was still too high or their air quality worsened after the work was done.

**Table V-35
Dissatisfaction with Program**

What about the National Fuel LIURP program dissatisfied you?		
Reason for LIURP Dissatisfaction	Participants	
	#	%
Bill is still too high	1	1%
Worse air quality	1	1%
Refused	1	1%
No Dissatisfaction¹	111	97%
Total	114	100%

Note: Respondents could select more than one response.

¹Only respondents who reported dissatisfaction were asked why they were dissatisfied.

Table V-36 shows respondents' suggestions for how NFG can let more customers know about LIURP. The top responses were increasing the use of bill inserts, mailings, social media, and general marketing. Other responses included TV, radio, and print advertising, increased calling, emailing, texting, and through community meetings.

**Table V-36
Additional Customer Awareness**

How do you think National Fuel can let more customers know about their LIURP program?		
Marketing Suggestions	Participants	
	#	%
Increase Bill Inserts	24	21%
Increase Mailing	15	13%
Increase Social Media Advertisements	11	10%
General/Other Advertisements	11	10%
TV, Radio, Print Advertisements	10	9%
Increase Calling	8	7%
Increase Emailing	2	2%
Increase Texting	2	2%
Community Meetings	2	2%
No Recommendations	4	4%

How do you think National Fuel can let more customers know about their LIURP program?		
Marketing Suggestions	Participants	
	#	%
Other	5	4%
Don't Know	41	36%
Refused	2	2%
Total	114	100%

Note: Respondents could select more than one response.

Table V-37 displays respondents' suggestions for how National Fuel can help customers more with LIURP. The most common response was to expand the list of eligible improvements, followed by improving marketing materials and communication. Other suggestions included increasing the potential for savings, improved education materials, better quality of work, and faster timelines.

Table V-37
Additional Customer Assistance

How do you think that LIURP program can help customers more?		
Ways to Help Customers More	Participants	
	#	%
Expand List of Improvements	16	14%
Improve Marketing Materials	11	10%
Improve Communication	8	7%
Increase Potential for Savings	5	4%
Improve Educational Materials	4	4%
Better Quality Work	3	3%
Faster Timeline	1	1%
No Recommendations	22	19%
Other	4	4%
Don't Know	43	38%
Refused	2	2%
Total	114	100%

Note: Respondents could select more than one response.

H. Summary and Recommendations

This section provides a summary of findings and recommendations from the LIURP participant and nonparticipant surveys.

Respondent Characteristics

The surveys collected information on the characteristics of the participants, nonparticipants, and their homes.

- Home Ownership: Eighty percent of the participants and 74 percent of the nonparticipants reported that they own their homes.
- Primary Language: English is the primary language spoken at home for almost all of the households surveyed.
- Race/Ethnicity: About 75 percent of participants and nonparticipants reported that they are white, and 11 percent reported that they are African American/Black.
- Poverty Level: Nonparticipants were somewhat more likely than participants to have income above the poverty level. Five percent of the nonparticipant respondents had income above 200 percent of the poverty level, but their income may have changed since the time they were recruited for LIURP.
- Home Type: Ninety-six percent of the nonparticipants reported that they live in single-family homes.
- Home Age: Most nonparticipants, 64 percent, live in homes built before 1960.

Recommendation: The results for the surveyed nonparticipants are consistent with the needs assessment findings. Customers are likely to speak English and live in single-family homes that they own. These characteristics make it easier to serve these households with LIURP, so additional marketing and awareness efforts have the potential to positively impact LIURP participation among the targeted customers.

Program Knowledge & Participation

The surveys collected information to assess program knowledge and reasons for participation or nonparticipation.

- Nonparticipant Program Awareness: Roughly half of nonparticipants reported that they had not heard of LIURP, and only 21 percent were aware that NFG or a contractor had tried to provide LIURP services in their home.
- LIURP Information Source: The most common source of LIURP information among both participants and nonparticipants was through a community agency or social service organization, followed by a letter from NFG, and word of mouth.

- **Understanding of LIURP Program:** Eighty-three percent of participants and 26 percent of nonparticipants reported that they understand LIURP. The other nonparticipants were most likely to be unaware of LIURP, but if they were aware, they did not understand the program purpose, services offered, or eligibility.
- **LIURP Participation Reasons:** While 47 percent said they participated to reduce their energy bills, 32 percent said they participated because of the no-cost improvements, and 14 percent said they participated to improve affordability.
- **Reasons for Nonparticipation:** Nonparticipants were most likely to state that they did not know why they did not participate (36 percent), followed by not having heard of the program (24 percent), or being ineligible or unsure if they met the eligibility criteria (14 percent). Less common responses were that they did not receive any follow-up communication, their landlord did not grant permission to participate, they did not finish or were unsure about their application, and they were unsure about the program and services provided.
- **Best LIURP Contact Method:** While 58 percent of nonparticipants indicated that a letter was the best method of contact, 39 percent said phone calls were best and 35 percent said that emails were best.

Recommendation: Most nonparticipants had not heard of LIURP or did not understand the services provided by the program, and most nonparticipation reasons related to this lack of LIURP knowledge or understanding. This also suggests that additional marketing and outreach is needed.

Participation Challenges

The participant survey collected information on challenges associated with LIURP participation.

- **Participation Challenges:** When asked about barriers, 14 percent of respondents experienced one or more challenges with the program.
 - Poor quality work: eight percent
 - Appointment scheduling: four percent
 - Incomplete work: three percent
 - Late contractor arrival: three percent
 - Getting home ready: one percent

Recommendation: Only a small percentage of customers experienced challenges with the program. The most common challenge reported was the work quality. Additional training and quality control could be warranted if complaints are more common in a subset of the providers. (NFG notes that NFG has not experienced any customer complaints about the LIURP process or contractors over the last several years and that any complaints will be investigated and addressed immediately.)

LIURP Nonparticipant Home Conditions

Nonparticipants were asked questions about their homes to assess potential ways that LIURP could improve their quality of life.

- Outside Noise: 32 percent reported that they always hear noise from outside, 15 percent said that they frequently hear noise, and 30 percent said that they sometimes hear noise.
- Air Quality: 16 percent reported that the air quality in their home is somewhat unhealthy and seven percent said it was very unhealthy.
- Cold Entering Home in Winter: 58 percent reported that they always or frequently experience cold air entering their homes.
- Unsafe or Unhealthy Temperature: 13 percent reported that they always or frequently experience unsafe or unhealthy temperatures in their homes during the winter and nine percent said they always or frequently experience unsafe or unhealthy temperatures in their homes during the summer.

Recommendation: Nonparticipants reported several areas where LIURP could improve their home safety and comfort. These benefits should be highlighted when conducting LIURP outreach.

LIURP Impact

The survey asked participants to report how LIURP had impacted them.

- Gas Bill: 49 percent said that their natural gas bills decreased.
- Home Comfort: 75 percent reported that their home was more comfortable.
- Air Quality: 32 percent reported that their home air quality improved.
- Home Temperature: 25 percent reported that the home temperature was more comfortable.
- Drafts: 13 percent reported that the home was less drafty.

Recommendation: These benefits should be highlighted when marketing LIURP. Participant testimonials, including videos could be a beneficial marketing tool.

Participant Satisfaction

The participant survey collected information on participant satisfaction and program feedback.

- LIURP Improvements: 91 percent were very or somewhat satisfied with the improvements.
- Contractor: 92 percent were very or somewhat satisfied with the contractor.
- Energy Reduction Information: 99 percent who said they received energy reduction information were very or somewhat satisfied with that information.
- LIURP Program: 94 percent were very or somewhat satisfied with the program overall.

Recommendation: High customer satisfaction and positive comments from customers show that the program is working for participants. This information can be leveraged in outreach efforts.

VI. Findings and Recommendations

This section provides a summary of findings and recommendations from the study and a road map for increasing LIURP participation and budget utilization.

A. *LIURP Accomplishments*

Average savings on LIURP jobs ranged from 13.6 percent for 2020 jobs (likely lower because of the pandemic) to 21.9 percent in 2022. These savings, even those from 2020, are high compared to other Pennsylvania LIURP programs that APPRISE has evaluated. This is likely related to the enforced criteria for high pre-treatment usage.

Additionally, LC-LIURP annual savings reported by NFG averaged 22.9 MCF per home or 16 percent of pre-treatment usage. Even these savings are high compared to other PA LIURP programs.

NFG's LIURP program is performing very well, and the key challenge they face is increasing participation. Therefore, the rest of this section focuses on findings and recommendations related to increased LIURP participation.

B. *NFG Actions to Increase LIURP Participation*

NFG reported that they have taken extensive efforts to improve LIURP participation.

- **Improved Outreach Materials:** NFG developed new materials in 2023 to provide information to customers about the program.
- **LIURP Outreach Phone Calls:** NFG began calling customers at the end of 2023 to inform them about LIURP prior to sending the customers' information to the service delivery providers. Prior to these calls, NFG would send an informational LIURP letter to the customer informing them of the program at the same time that they sent the referral to the service delivery organization. The letter from NFG informed the customer that they will be contacted by the particular organization.

At the time of this research, it was too early to assess how much of an impact these calls had on customer participation. However, NFG perceives that they have had a very positive impact on customer acceptance of services and three of the six service providers reported a positive impact from NFG calling customers before sending referrals out to the providers.

- **Increased Health & Safety and Repair Allowances:** NFG increased the amount that providers were permitted to spend on services to enable weatherization measures to be installed.

NFG's allowance is \$500 for initial pre-approved contractor spending that meets the health and safety guidelines. On a case-by-case basis, NFG approves up to \$1,000 prior to the start of the work that will enable weatherization to proceed.

The incidental repairs allowance is up to \$100 pre-approved, and up to \$200 on a case-by-case basis for repairs that are needed to complete the home's weatherization. These repairs include work such as window repair, venting/pipe issues, and chimney repair.

- **Landlord Approval:** NFG has worked to reduce the burden of the landlord approval form and has been networking with landlord/apartment associations in their service territory to increase program awareness.
- **Additional Service Providers:** NFG brought on two additional providers and continues to work to recruit more contractors.

NFG has worked to recruit additional providers with newspaper advertisements, Google searches, by word of mouth, and asking staff to reach out to their contacts. NFG has partnered with a new private contractor and a new agency that does work with the local electric utility and is aiming to coordinate more weatherization jobs.

- **Provider Compensation:** NFG initiated contractor payments of \$150 for no-show customers to incentivize contractors to reach out to customers. This provides compensation for their outreach efforts, time, and expenses associated with scheduling and attempting to complete the weatherization jobs.
- **Expanded Eligibility:** NFG initiated the LC-LIURP to expand the pool of customers who are eligible for program services to those with annual natural gas usage of 900 to 1,299 ccf, and this pilot was approved through the end of the current Plan.
- **NFG Staff Training:** NFG expanded their staff training to increase NFG program awareness among all staff members who interact with customers. Staff who are more aware of the benefits and requirements of the program are more capable of convincing customers to accept LIURP services.

NFG call center staff make referrals for customers who have bill payment problems or express an interest in weatherization. The call center representatives have been trained and also receive refresher training for special programs. NFG includes special programs in Collections training in the spring and a High Bill training in the fall. The program-focused training is provided to all new hires and is repeated once a year.

More in-depth training was provided to NFG staff in 2024 to continue improving awareness and understanding of all NFG programs with a goal of receiving more LIURP referrals from the call center representatives and increasing program participation. This training included more detailed information for NFG's Universal Service Programs, including LIURP. NFG received good feedback from the representatives and noticed an uptick in the referral rate after this training. The training is provided to all new hires and will be repeated once a year.

- **Provider Meetings:** NFG holds annual contractor meetings to improve consistency and communication about LIURP, share best practices, set goals and expectations, and

answer questions. They expect that these meetings will lead to an increase in the number of LIURP jobs completed.

- General Outreach: NFG increased outreach to customers and community partners.

NFG tracks low-income customers by collecting income provided during payment arrangements, CAP participation, Neighbor for Neighbor recipients, LIURP participation, and LIHEAP recipients. Customers at or below 200 percent of the FPL that meet the consumption threshold are reviewed for LIURP.

LIURP is always part of NFG outreach during events that NFG attends. Materials include assistance program brochures, LIURP features sheets, LIURP FAQ sheets, Energy Tips sheet, and energy conservation kits (which contain energy conservation/weatherization materials such as sealant foam, switch plates, weather stripping and window insulation shrink kit). The outreach events include but are not limited to the following.

- Tables during school family resource fairs.
- Legislator education and agency training.
- Senior fairs and community events.
- Landlord/Apartment Association events
- Universal Service Advisory Committee meetings (USAC)
- Networking events
- Distribution of brochures to local agencies
- Bill inserts/newsletters

C. Additional NFG Plans to Increase LIURP Participation

NFG reported that they are planning for the following additional efforts to improve LIURP participation.

- CAP Participants: While CAP participants are required to participate in LIURP, the requirement is not currently enforced. NFG is actively working to increase CAP participation, so enforcing the LIURP participation requirement could be counterproductive for CAP. However, consistent with the Plan, NFG has plans to send CAP participants a letter reminding them that CAP eligibility requires participation in LIURP if eligible. This is increasingly important as NFG recently transition to CAP, a Percentage of Income Payment Program, from its longstanding rate discount program. This change may result in higher subsidies for CAP participants.
- Provider Services: NFG's expectation is to require faster turnaround by providers on the customer referral lists.
- Landlord Participation: NFG would like to continue to improve the process for landlords to expedite the LIURP approval process.

D. Recommended Additional LIURP Participation Improvement Actions

NFG has taken many steps to increase LIURP participation over the past few years and has seen impacts of their actions in a participation uptick. If NFG's additional efforts are not sufficient to reach LIURP goals, we recommend the following actions. However, each recommendation should be assessed relative to the additional participation increase needed and relative to the projected costs and benefits of these efforts.

- **General Awareness:** Most nonparticipants had not heard of LIURP or did not understand the services provided by the program, and most nonparticipation reasons were related to this lack of LIURP knowledge or understanding. This suggests that additional marketing and outreach is needed to increase awareness and acceptance of LIURP.

Research from this study suggests information that could be effective in these efforts.

- Nonparticipants reported several areas where LIURP could potentially improve their home safety and comfort. Potential benefits including a reduction in noise, improved air quality, reduced draft, and a reduction in unsafe or unhealthy temperatures should be highlighted when conducting LIURP outreach.
- Participants reported that their gas bills declined, their home comfort improved, their air quality improved, their home temperature improved, and their homes were less drafty. These benefits should be highlighted when marketing LIURP. Participant testimonials, including videos, could be a beneficial marketing tool.
- High customer satisfaction and positive comments from customers show that the program is working for participants. This information can be leveraged in outreach efforts.

General awareness can be increased through the following methods.

- **Brochures:** NFG can develop more engaging brochures to inform the public about LIURP.
- **Email Blasts:** NFG can send emails to all customers who potentially meet the LIURP eligibility criteria.
- **NFG Website:** NFG could provide more visible LIURP information on their website and potentially have information pop up for customers tagged as meeting the LIURP eligibility criteria.
- **Social Media:** NFG has done a couple of promotions for weatherization via social media. This is a low-cost method that can be used more often and with more compelling information, including customer testimonials.
- **Assess Changes in Awareness:** While conducting outreach calls, NFG should record information on whether customers were aware of and were knowledgeable about the

program. Changes in rates of awareness and knowledge over time can be tracked to determine if general outreach has been successful and the extent to which additional outreach methods are needed.

- **Targeted Participant Outreach:** NFG should continue outreach to targeted LIURP participants. Based on initial feedback from calls to customers, it appears that this method could be very successful, as the conversations provide information, reduce skepticism, and increase acceptance of program services.

Service delivery providers also suggested that NFG could improve their letters to customers to provide more information about LIURP, including education about the potential measures that could be installed, and perhaps inclusion of a colorful pamphlet to educate customers about the program and efficient steps they can take in their homes.

The letters and/or pamphlet could also emphasize to customers that renters are eligible for the program with the approval of their landlords, as this information is not currently included in the information that NFG mails to the customer.

- **Service Provider Training:** Some of the provider interviews suggested that the service delivery providers have gaps in their understanding of LIURP requirements and benefits. NFG could increase training to providers to ensure that they fully understand the program.

While only a small percentage of customers experienced challenges with the program, the most common challenge reported was the work quality. Additional training and quality control could be warranted if complaints are more common in a subset of the providers.

NFG could also consider funding conference attendance to improve providers' general knowledge about home performance principles and practices. This benefit could further increase providers' interest in providing NFG LIURP services to their clients.

- **Health and Safety Guidance:** Providers reported that the key barriers to service delivery are mold and moisture and knob and tube wiring, although NFG data show that these barriers are only present in a small percentage of jobs. NFG should develop clear guidance for providers to address these issues, as there were reports from providers that a lack of clear standards prevented them from doing this remediation work. NFG could also consider increased funding for remediation, as two providers said that the current level of funding was not sufficient. For agencies not able to address these issues, NFG could potentially assist with subcontractors or NFG contractors to address them.

NFG can also collect data from providers to track these issues and the cost of remediation to develop more systematic plans for remediation in the future.

- **Incentivizing Coordinated Jobs:** NFG could consider providing a financial incentive to service delivery providers to coordinate jobs. This incentive could also compensate the providers for the additional paperwork associated with the coordinated jobs.

Coordinated jobs can be an important means to complete LIURP work and to increase cost-effectiveness, as two of the six agencies reported that they use coordinated service delivery to help address the health and safety issues that they identify in customers' homes.

- **Service Provider Requests:** Support requested by service delivery providers included additional guidelines or procedures, NFG customer service training, service provider IDs, shorter payment terms, electronic access to customer data, and an improved email system. While all of these actions may not be possible, NFG could connect with providers more frequently to ensure they are furnishing as many resources as possible to support LIURP service delivery.
- **CBO Referrals:** NFG reported that they do not receive many referrals from CBOs. NFG could consider a referral fee for CBOs that refer customers who complete LIURP participation.
- **Provider Flexibility:** NFG reported that customers often face difficulties when scheduling the work to be done on their homes. Providers do not appear willing to deliver services on the weekend, and their most productive contractor provides services four days per week. NFG could consider additional compensation for providers who deliver services outside of regular business hours.

Other potential methods, if those stated above are not sufficient, could include the following.

- **Provider Staffing:** Five of the six providers completed fewer jobs than planned. All five agencies attributed the challenge to staffing issues and several stated that they focused their staff on WAP jobs. Three of the providers were actively searching for qualified candidates but faced challenges including finding qualified candidates, lack of response, background check failures, and drug screening failures. NFG could consider assisting the agencies with hiring by connecting them with workforce development programs.
- **Additional Providers:** NFG has faced challenges bringing in additional service delivery providers. They could consider providing support to interested contractors including training to develop the blower door testing skills they need, and support in obtaining the required insurance.

E. Roadmap for LIURP Improvement

We recommend the following plan to reach NFG's participation and budget goals for LIURP. The details of each recommended step were discussed in the preceding sections.

- A. Improve General Awareness of LIURP
- B. Increase Outreach to Potential Participants
- C. Sustain Enhanced Training for NFG Staff
- D. Develop NFG Procedures and Guidelines for Service Providers
- E. Increase Training for and Communication with NFG Service Delivery Providers
- F. Consider Additional Efforts to Address Health & Safety Issues and Renter Access
- G. Collect Data (when making outreach calls) and Assess Progress
- H. Continue to Reassess and Improve LIURP Marketing, Outreach, Training, and Materials on a Regular Timeline
- I. Continue to Assess Need for Additional LIURP Providers