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Xcel Energy

Colorado Whole Home Efficiency Product Impact and Process Evaluation

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2022 Colorado Residential Whole Home Efficiency Product

Introduction

The Colorado Whole Home Efficiency Product supports Xcel Energy residential customer in identifying ways to save on energy costs while maintaining or improving the comfort of their homes. To be eligible for Whole Home Efficiency, customers must first complete an audit through an Xcel Energy Home Energy Squad Plus visit or find a qualified, participating trade partner to complete a Blower Door or Infrared Home Energy Audit. The product provides rebates for each energy efficient home upgrade and a bonus rebate of 10% of the total rebated amount for completing three qualifying measures.

As part of the process evaluation, TRC collected feedback on trade partner and customer experiences with the Whole Home Efficiency Product's processes, explored strategies for engaging customers and to further motivate customers to participate, and identified the sources of the product's challenges with trade partner engagement. For the impact evaluation, TRC assessed the impact of the product on customer decision making. This summary includes the key findings and recommendations from our evaluation.

Methods

Participating customer interviews (n=8)

Near-participating customer interviews (n=11)

Participating trade partner interviews (n=3)

Nonparticipating trade partner interviews (n=11)

Peer utility interviews (n=5)

Fielding:
July – October 2022

Summary of Findings



The evaluation team estimated a retrospective **NTGR of 0.76** based on participating customer and trade partner responses. The team recommends Xcel Energy could apply a prospective **NTGR of 0.83** if evaluation recommendations are implemented.



Customers learned of the Whole Home Efficiency product through **the trade partner who completed the upgrades to their home**. Customers were not often aware of the product processes or bonus rebate.



Currently, customers and trade partners are only completing air sealing and insulation projects through Whole Home Efficiency. In 2021, there was **no participation through HVAC measures**. The **audit requirement** and a **lack of interest in collaboration between trades** are barriers to HVAC contractor participation.



Trade partner participation decreased due to **removal of LEDs, the ability to participate in standalone products** and perception that the **bonus amount was not motivating**.



Trade partners expressed some misunderstanding of the product, including perceptions that they **could not participate if they did not have three upgrades** to make themselves, that they would have to **work with trade partners from other specialties**, and that the **name change signified a change to the program design**.



Near-participating customers, who have completed a home energy audit or Energy Squad Plus visit are **motivated to improve their homes** and were interested in completing **multiple upgrades** within the next few years.

Product Influence

Retrospective

Net-to-Gross Ratio: = (1 - **Free Ridership**) + (**Spillover Ratio**) + (**Market Effects**)

$$0.76 = (1 - 0.24) + (0.00) + (0.00)$$

Audits and **trade partners** are driving customers to pursue energy efficiency home upgrades. Product influence is limited by customers who felt they would complete projects without the product

The evaluation team **found no evidence** of participating or near-participating spillover.

The evaluation team found **no evidence** of market effects. Trade partners do not think the product is influencing them to do anything not already captured by Xcel Energy.

Customer Engagement

Product Awareness

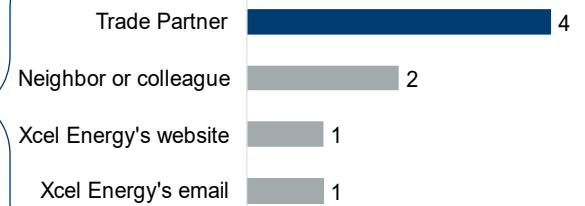


While auditors do discuss rebate options with audit participants, **they do not mention the rebates available through Whole Home Efficiency.** Only one non-participating customer was aware of Whole Home Efficiency, even after completing a home energy audit.



Participating customers primarily learned about the rebates offered through Whole Home Efficiency through the **trade partner who completed their home upgrades.**

Source of Customer Awareness



Barriers to Customer Engagement



Customers and trade partners both felt that **lack of customer awareness and information on the product and its offerings was a barrier** to participation. Customers and trade partners described several opportunities for increased outreach:

- **Website presence:** Helping customers learn about Whole Home Efficiency through the Xcel Energy website.
- **Outreach from Implementer:** Increasing customer awareness through proactive, targeted outreach to customer.
- **Product Promotion by Trade Partners:** Encouraging trade partner to recommend the product to their customers.
- **Multichannel Outreach:** Using word-of-mouth, email, leave-behinds, social media, to continuously engage customers.



While no participating customer felt this was a barrier, some non-participating customers and trade partners noted that the **two-year window for installing all three upgrades could be a barrier due to timing and budget constraints.** Customers and trade partners generally did not feel the **current bonus rebate was large enough** to motivate them to complete the projects within the two-year time frame.

Trade Partner Engagement

Barriers to Trade Partner Participation



While the recent product design change to remove the requirement for an insulation product did not impact participation (**no participating trade partner was familiar with this change**), some trade partners decreased or stopped participating when **lighting measures were removed from the program several years ago.**



This highlighted a misunderstanding of the product processes – Several trade partners thought they **had to be able to complete all three upgrades themselves**, so when lighting was removed, they could not think of a third project they could complete.



Trade partners said that they primarily applied for customer rebates through the **standalone products** because they better understood the process, only had to complete one form, and did not have to complete three projects for the customer or coordinate with another trade to do so.

Barriers to Trade Partner Participation, Cont.



Non-participating HVAC contractors felt that the audit requirement was the biggest barrier to their participation because most of their business is **“replacement on failure”** – So having to complete an audit ahead of time would prevent them from participating.



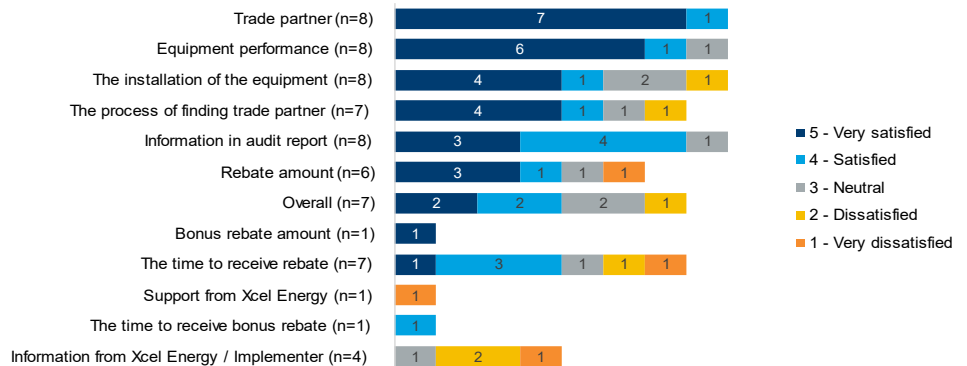
Few trade partners felt able to **facilitate collaboration with other trade partners of differing specialties** without support from product staff or implementers. Participating insulation contractors said they were not aware of contractors in other specialties whom they felt comfortable referring their customers to or were up to their standards.

“There’s only one HVAC contractor I know that measures the windows to figure out their calculation. Everybody else is kind of guessing.” – Participating Insulation Trade Partner

Product Satisfaction

Participating customers were most **satisfied** with their trade partner and equipment performance.

Participating customers were least satisfied the **information they received from Xcel Energy or the Implementer.**



Half of participating customers (n=4) rated their overall satisfaction a **4 or 5 out of 5**, where 1 means “not at all satisfied” and 5 means “very satisfied.”



Satisfaction findings for customers underscored the **importance of the trade partner** in influencing customer decision-making and **the need for increased outreach to customers.**



Trade partners provided a range of satisfaction scores, with one providing a “1”, one rating it a “3” and the third rating it a “5”, which gives an average rating of **3 out of 5.**



Trade Partners were **most satisfied with the product staff.** They were least satisfied with the **size of the bonus rebate and the size of the equipment rebates.**

Product Experience



Participating customers were motivated to install energy efficiency upgrades to **reduce energy bills and improve comfort in their homes.** These findings were underscored by participating trade partners, who were motivated to participate in the Whole Home product by a **desire to help their customers improve the efficiency and comfort of their homes.**



Participating customers did not find the application process difficult, but frequently reported that **their trade partner completed the application** on their behalf. Trade partners felt that the application for Whole Home Efficiency was **more complicated than the application for the standalone products**, and that that bonus rebate was not significant enough to make the extra paperwork worth their time.



Neither participating customers or trade partners described working closely with the implementer, whose role is intended to provide both customers and trade partners with high-touch support throughout the process of participating in Whole Home Efficiency. Only one participating customer recalled interacting with the implementer. Trade partner only reported interacting with the implementer through the QA/QC process.

Conclusions & Recommendations

The evaluation team estimated a retrospective **NTGR of 0.76** for the Whole Home Efficiency product based on participating customer and trade partner responses. The team recommends Xcel Energy could apply a prospective **NTGR of 0.83** if recommendations are implemented.

Apply prospective NTGR of 0.83 when product design updates are implemented. If Xcel Energy implements updates to rebates, TRC recommends an adder of .02 to Retrospective NTGR. The evaluation team believes the product could increase its influence the most through marketing and outreach. If Xcel Energy implements improvements to marketing efforts (suggested above), we recommend an additional adder of .05 to Retrospective NTGR. Combined, these two adders come to 0.83.

- Engage the implementer to better facilitate connections between trade partners of different specialties so they can support customers.
- Leverage the implementer to facilitate trade partner trainings, to underscore benefits of the product, clarify product misconceptions, and provide clear updates on product changes.
- Increase bonus rebate to drive participation and motivate customers to make multiple upgrades.
- Use multiple outreach channels to highlight resources available to customers to help select projects and connect with trade partners.
- Increase promotion budget to allow for multi-channel outreach and improve ability to engage customers through high-touch outreach.
- Leverage audit participants as hot leads by mentioning the bonus rebate during audits and after-audit follow-up.
- Ask implementer to repeat contacts to audit participants and partial participants to encourage them to install different measure types (like HVAC) and connect them to the appropriate resources.
- Develop leave-behind marketing for the product during audits/Home Energy Squad visits.

Trade partners generally like a more streamlined process for participating in rebate products and customers often do not understand that Xcel Energy has different products for rebates. Additionally, Xcel Energy is capturing some upgrades through stand-alone products that would be eligible for Whole Home. There is opportunity to streamline the multiple products and avoid competing for savings by combining residential rebates.

Assess the feasibility of converting Whole Home Efficiency into a non-resource product that supports the stand-alone residential rebate products to streamline participation for trade partners and customers.

- If implemented, Xcel Energy should reassess whether customers would still be required to get an audit to qualify for bonus rebates. Emergency replacements could be counted as a separate opportunity (without requiring an audit or requiring a post-installation audit within a reasonable time frame).
- Xcel Energy should apply separate NTGRs for each stand-alone measure in a project, rather than applying the Whole Home Efficiency NTGR to the entire portfolio.
- This update would represent a large structural change to the Whole Home Efficiency product and would require considerable administrative resources to implement but is likely to improve customer and trade partner satisfaction with the rebate process and drive additional participation.

Trade partners rarely work with contractors from other specialties and are reluctant to make referrals. Insulation contractors described this as a reason that they only tell customers about the product if they can complete all three projects themselves.

Engage the implementer to better facilitate connections between trade partners of different specialties so they can support customers.

- Because contractors are hesitant to make referrals to contractors whose work they cannot vouch for, no contractor is encouraging customers to install multiple measure types.
- Until another market actor develops this business model, the implementer is best-positioned to help customers find different types of trade partners to complete audit recommendations.
- This is already set as an expectation for the implementer through the implementation contract with Xcel Energy, but the evaluation team did not find evidence that this "concierge-style" service was happening frequently with customers or trade partners.
- As an alternative, Xcel Energy could consider developing a general contractor role who would help facilitate communication between various types of trade partners.

Conclusions & Recommendations

Trade partners expressed some misunderstandings about product eligibility and frustrations with the process of applying for Whole Home.

Leverage the implementer to facilitate trade partner trainings, to underscore benefits of the product, clarify product misconceptions, and provide clear updates on product changes.

- Use these opportunities to resolve misconceptions that trade partners do not need to connect their customers to other contractors or install three projects themselves.
- Highlight the trade partner incentive and show benefits that could be realized by taking advantage of the incentive.
- Clarify recent product updates with trade partners, such as the product name change, removal of the insulation requirement, and removal of lighting rebates.
- The implementer is supposed to conduct two trainings or webinars with trade partners each year through the implementation contract. These opportunities should be leveraged to provide the information recommended above.
- Additionally, Xcel Energy could consider redesigning the rebate application to ease the process of applying for the rebate, if it remains a barrier even after increasing trade partner education.

Customers are currently unaware of the bonus rebate and trade partners do not feel the additional 10% is very motivating – and often do not mention it specifically to customers.

Increase bonus rebate to drive participation and motivate customers to make multiple upgrades.

- Increasing the bonus rebate could bring additional customers to the product who were not influenced by the rebates offered for standalone products.
- Increasing the bonus would also help overcome the cost barriers associated with completing multiple projects within a limited two-year window.

Highlight the bonus rebate in proactive after-audit follow-up with customers.

- The bonus rebate sets the Whole Home Efficiency product apart from stand-alone products and highlighting it can help drive participation by customers who are considering installing multiple energy efficiency measures in their homes.
- This could be done as part of tracking the after-audit follow-up with customers on the audit recommendations. Product staff or the implementer should develop additional outreach that is triggered once customers complete each audit recommendation and include a reminder about the availability of the bonus rebate.

Participating customers were unfamiliar with product processes and there is opportunity to drive participation in different measure categories by engaging requiring the implementer to increase outreach to the customer and contractors.

Use email multiple outreach channels to highlight the resources available to customers through the implementer, including the Energy Advisor, who can help them select projects and connect with trade partners.

- Current product design is not influencing customers to install measures other than insulation. Reminding customers of the resources available through Xcel Energy product staff and the implementer's Energy Advisors could help drive participation in other measure categories like HVAC.

Increase promotion budget to allow for multi-channel outreach and improve ability to engage customers through high-touch outreach.

Audit participants are motivated and planning to install energy-efficient home upgrades and have completed the requirement for participation in Whole Home Efficiency.

Leverage audit participants as hot leads by asking auditors and implementation staff to specifically mention Whole Home Efficiency and send targeted after-audit email outreach to customers promoting Whole Home Efficiency.

- Targeted outreach to Home Energy Audit/Home Energy Squad participants is a straightforward way to generate hot leads for Whole Home.
- Work with implementers to develop a plan and goals for product outreach after audits. Ensure that expectations for outreach and “concierge” service are clear to implementer and part of their performance metrics.
- These leads could also be used to begin promoting or developing a targeted electrification path with the intent to support customer transition into smart electric homes.

Conclusions & Recommendations

Customers are currently only pursuing insulation measures through the product, and no HVAC contractors are currently participating. HVAC contractors see the audit as a barrier and are hesitant to promote Whole Home Efficiency as a result.

Ask implementer to repeat contacts to audit participants and partial participants to encourage them to install different measure types (like HVAC) and connect them to the appropriate resources.

- HVAC contractors described being more likely to participate in Whole Home Efficiency if customers making upgrades, who had already completed an audit, were proactively connected to them by the implementer or if they were contacted directly by the customer themselves.

Peer utilities described word-of-mouth communication as the most effective strategy to market their products. Several participating and nonparticipating customers learned of Whole Home or the audits through neighbors or friends.

Develop leave-behind marketing for the product during audits/Home Energy Squad visits.

- Provide a one-page leave-behind document or magnet to implementer staff, specific to Whole Home Efficiency.
- This can serve as a reminder to the customer to complete projects and as an opportunity to spread word-of-mouth information because it can be shared easily with friends or family.
- Physical reminders are particularly important to programs like Whole Home Efficiency because they can encourage customers to mention Whole Home Efficiency to others and drive interest in the product.

1 Introduction

Xcel Energy offers a comprehensive array of energy services and products to its customers, including demand side management (DSM). For its 2022 product evaluations, Xcel Energy sought to understand the role each evaluated product plays in changing the marketplace, to analyze that influence on customer choices, and to use the findings to improve customer experience and ensure industry-leading product performance. To accomplish this, Xcel Energy contracted with TRC to evaluate nine products offered in Colorado and Minnesota in 2022. This included the Whole Home Efficiency Product in Colorado, discussed in this report. This introduction includes an overview of the product and the evaluation approach and describes the organization of the report.

1.1 Product Overview

The Whole Home Efficiency Product (referred to as Whole Home) supports Xcel Energy residential customers in identifying ways to save on energy costs while maintaining or improving the comfort of their homes. To be eligible for Whole Home, customers must first complete an audit through an Xcel Energy Home Energy Squad Plus visit¹ or find a qualified, participating trade partner to complete a Blower Door or Infrared Home Energy Audit. The product provides standard rebates (that align with rebate amounts for stand-alone products) for each energy-efficient home upgrade and a bonus rebate of 10% of the total rebated amount for completing three qualifying measures. All three of the improvement projects must be completed within two years of when customers complete their audits. In addition to incentives to customers for completing projects, Xcel Energy also provides a separate incentive to trade partners who complete projects through the Whole Home product. All improvements must be completed by participating trade partners who are registered with the product.

Xcel Energy has made several changes to the Whole Home Efficiency Product in the past two years:

- **Removal of insulation requirement:** Until 2019, Xcel Energy required customers to complete an insulation improvement to be eligible for participation in Whole Home. This requirement was removed to give the homeowner more flexibility in their choice for eligible upgrades.
- **New measures:** In the past two years, Xcel Energy staff have added several new measures to the product, including boilers, indirect water heaters, clothes washers and dryers, and cold climate heat pumps.
- **Product name change:** In April 2022, the name of the product changed from Home Performance with ENERGY STAR® to Whole Home Efficiency. The product is no longer affiliated with Home Performance with ENERGY STAR and no longer follows those program requirements. However, Whole Home-eligible equipment must still meet ENERGY STAR certification.

In addition to these recent changes, Xcel Energy is planning several more changes in 2023. Whole Home product staff are considering implementing a pay-for-performance (P4P) model for insulation measures based on baseline R values. Incentives for insulation would be determined based on customers' pre- and post-improvement R values rather than a prescriptive incentive based on the cost of materials and labor. If implemented, this would be the only measure that did not align with standard incentives in other stand-alone products.

¹ The Xcel Energy Home Energy Squad Plus visits are also conducted by the program implementer.

While there are several other eligible measures² through the Xcel Energy Whole Home Efficiency Product, participating customers only reported installing air sealing and insulation measures in 2021. As shown in Table 1-1, participants installed four different types of electric- and gas-saving measures. The measure group that claimed the most electric and gas savings was wall insulation, which accounted for over 33% of the total savings in 2021. The 2021 product provided bonus rebates to five customers for completing three qualifying measures and provided trade incentives to three trade partners for installing product-eligible measures.

Table 1-1. CO Whole Home Efficiency Product Savings, January 2021 – December 2021

Measure	kWh		kW		Therms	
	Quantity	% of Total	Quantity	% of Total	Quantity	% of Total
Air Sealing & Weather-stripping T2	233	10.3%	0.426	10.3%	389	12.3%
Air Sealing & Weather-stripping T3	554	24.5%	1.011	24.5%	902	28.4%
Attic Insulation	714	31.6%	1.299	31.6%	834	26.3%
Wall Insulation	757	33.5%	1.381	33.5%	1,050	33.1%
Total	2,258		4.117		3,175	

Note: This is the population of participating customers who received rebates between January 2021 and December 2021. These numbers are based on aggregated data provided to TRC in March 2022.

1.2 Evaluation Overview

The evaluation team designed a comprehensive evaluation of the Whole Home Efficiency Product to provide information on four key research objectives:

1. Estimate product influence on customer decisions (i.e., net-to-gross ratio, or NTGR).
 - Determine NTGR for qualifying measures rebates.
 - Identify major drivers of free-ridership.
 - Assess participating customer spillover.
 - Assess market effects of the product.
2. Understand how best to engage customers and further motivate customers to participate.
 - Research whether audit providers feel there are opportunities to discuss the product with homeowners, both before and after the audit process.
 - Determine what marketing channels would help customers better engage with Whole Home and motivate them to participate in the product.

² Measures that qualify for rebates under Whole Home products include heating and cooling measures (such as evaporative coolers, smart thermostat, and water heater), and air sealing and insulation measures (such as air sealing, wall insulation, and attic insulation).

- Understand what level of outreach is needed to proactively promote Whole Home and how best to leverage the implementation team to promote the product.
- Explore peer utilities' experiences with optimizing customer engagement.
- Determine successful marketing strategies used by peer utilities to improve customer awareness and participation.
- 3. Identify the sources of the product's challenges with trade partner engagement.
 - Understand why participation by insulation contractors has decreased in the past five years and why it is difficult to recruit HVAC contractors, with 2021 being an all-time low in participation. Probe into how external factors (housing market, new construction) have affected participation.
 - Explore ways to further engage non-participating trade partners.
 - Understand trade partner perspectives on how to better facilitate collaboration between trade partners of different specialties.
 - Determine successful strategies used by peer utilities to improve trade partner engagement.
- 4. Explore participating customer and trade partner product experiences.
 - Understand how customers become aware of Whole Home and whether there are opportunities to increase promotion of the product through Home Energy Squad visits.
 - Explore participating customer and trade partner experiences and satisfaction with the product.
 - Determine what (if any) barriers trade partners face in completing the rebate application for the product.
 - Determine what prevents a customer from completing three Whole Home-eligible projects, including whether customers consider the audit requirement a barrier. Research whether peer programs offer a non-audit track for participation and, if so, whether they find that customers are interested in that track.
 - Determine whether the product benefits and current rebate structure are sufficient to overcome previously identified barriers, including the removal of the insulation project requirement, the COVID-19 pandemic, and product pre-requisites.
 - Explore ways to simplify and clarify the product, while ensuring that customers receive continuous support throughout different phases of the product.
 - Understand where there are gaps or overlaps in roles and responsibilities between auditors, program administrators' energy advisors and trade partners. Explore strategies for better educating auditors, the program administrator, and trade partners about the product and their roles.

1.3 Report Organization

The following chapters organize the evaluation findings into two components: impact and process evaluation results. Further detail on the evaluation approach is presented in the following chapters.

- Chapter 2 presents an overview of the net impact and process evaluation, as well as characteristics of respondents from our data collection efforts.

- Chapter 3 discusses the results of the net impact evaluation and the attribution of product impacts using a standard net-to-gross ratio (NTGR) analysis.
- Chapter 4 discusses the process evaluation results, including product awareness, motivations and barriers, product satisfaction and experiences, trade partner support, and peer utility insights.
- Chapter 5 presents conclusions and recommendations.
- The report's appendices provide supporting documents, such as the evaluation plan, data collection instruments, and task-specific findings.

2 Evaluation Overview & Respondent Characteristics

To accomplish the objectives of the Whole Home Efficiency Product evaluation, TRC completed a suite of intersecting and complementary research activities in 2022. We have provided detailed information on the sampling approach used for the research in the Evaluation Plan, found in Appendix A. The following discussion highlights the research topics addressed by each of the following research activities: staff interviews, participating and nonparticipating customer interviews, participating and near-participating trade partner interviews, and peer utility interviews. Within each research activity description, the evaluation team have also included a description of respondent characteristics to help frame the results presented in Chapters 3 and 4. Table 2-1 presents an overview of how each of these research activities relate to each research objective of the Colorado Whole Home product evaluation.

Table 2-1. Evaluation Summary Table

Primary Research Objectives	Staff Interviews (n = 6)	Product Design Assessment	Participating Customer Interviews (n = 8)	Non-participating Customer Interviews (n = 11)	Participating Trade Partner Interviews (n = 3)	Non-participating Trade Partner Interviews (n = 11)	Peer Utility Benchmarking Interviews (n = 5)
Inform Evaluation Plan	X						
Product Influence (NTGR)			X	X	X	X	
Customer engagement			X	X			X
Trade partner engagement					X	X	X
Product experiences		X	X		X		X
Market growth							X

2.1 Staff Interviews

In March and April 2022, the evaluation team conducted telephone interviews with key staff managing and implementing the Whole Home product. The overall objectives of the staff interviews were to understand staff experiences with the product, feedback they've received from market actors on the product, and feedback on priority research topics for the evaluation. To conduct this research, we completed six telephone interviews with Xcel Energy and product administrator staff. Those interviewed from Xcel Energy included the current and former product managers, team lead, trade relations manager, and product engineer. The evaluation team also conducted two interviews with the product administrator's quality assurance/field operations manager and the associate product manager. These interviews were conducted over voice or video calls and took between 45 minutes and one hour to complete. The

2 Evaluation Overview & Respondent Characteristics

interviews, combined with the kickoff meeting, allowed the evaluation team to create a focused evaluation plan with defined data collection activities.

Appendix B.2 presents the interview guide used for these discussions and Appendix C.2 provides results specific to this research activity.

2.2 Participating Customer Interviews

The evaluation team conducted in-depth telephone interviews with participating customers. This section presents the interview objectives, the participant sample, and key characteristics of the interview respondents. We designed the participating customer interview to address the following evaluation topics:

- **Product experiences and satisfaction:** The evaluation team assessed participating customers' experience throughout the product, including what was working well, what customers found were the most important or valuable aspects of the product, and aspects of the products that could be improved.
- **Customer Engagement:** The evaluation team assessed participating customer product awareness and engagement to understand how to better market the program to customers and improve engagement.
- **Net-to-Gross Impacts:** The evaluation team asked participating customers questions about product attribution (i.e., the impact the product had on their decision to purchase energy efficiency measures through Xcel Energy). We team also asked respondents about any additional energy-efficient equipment installed due to their experience with Whole Home but for which they did not receive an Xcel Energy rebate.

The evaluation team conducted phone interviews with eight participating customers out of a total population of 19 (42% response rate) using customer records from Xcel Energy, which provided a 90% level of confidence with a minimum of +/- 21% relative precision. Due to the small population, we defined a participating customer as any customer who participated in Whole Home between June 2020³ through May 2022⁴. This population includes customers who installed three or more measures and qualified for the bonus rebate (full participants), as well as customers who installed fewer than three measures (partial participants). The evaluation team analyzed participating customer responses by the type of audit the customer completed. Most participating customers (75%) completed a Home Energy Audit with Infrared by participating qualified trade partners. The number of measures installed ranged from one to four measures, with the majority of respondents completing air sealing, attic insulation and wall insulation measures. Table 2-2 presents the number of participants interviewed by audit type.

³ Including only participants from 2020 who began participating after product design changes were implemented in April 2020.

⁴ As of May 26th, 2022, there are currently no projects/participants in the pipeline for 2022.

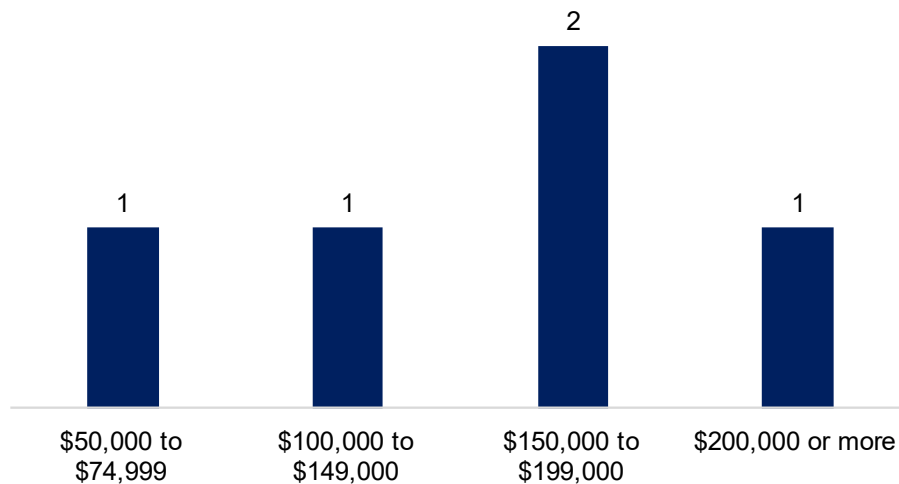
2 Evaluation Overview & Respondent Characteristics

Table 2-2. Participating Customer Sample

Customer ID	# of Measures	Energy Audit	Air Sealing	Attic Insulation	Wall Insulation
C1	4	Home Audit	✓	✓	✓
C2	2	Home Audit	✓	✓	
C3	4	Home Audit	✓	✓	✓
C4	4	Home Energy Squad	✓	✓	✓
C5	4	Home Audit	✓	✓	✓
C6	4	Home Audit	✓	✓	✓
C7	1	Home Energy Squad	✓		
C8	4	Home Audit	✓	✓	✓

The participating customer respondents reported varying household incomes, with most living in single-family homes. Half of the respondents lived in either single-family homes (4 respondents) and single-family attached homes, such as a duplex or townhome (2 respondents).⁵ Five respondents shared a varying range of household income before taxes, as shown in Figure 2-1.

Figure 2-1. Participating Customer Demographic by Income



⁵ Two respondents declined to answer demographic questions.

Appendix B.3 contains the interview guide used for the participating customer interviews, and Appendix C.3 provides results specific to this research activity.

2.3 Nonparticipating Customer Interviews

The evaluation team conducted eleven telephone interviews with nonparticipating customers. For the purpose of this research, we defined nonparticipating customers as customers who participated in an audit in the past three years, but who did not install any eligible measures through Whole Home. The evaluation team attempted to interview both customers who signed up for Whole Home after their audit and those who did not.

- **Customer Engagement:** The evaluation team explored why customers chose not to participate in Whole Home and sought to understand what perceptions and barriers lead to not engaging with the product.
 - The evaluation team explored customers' level of awareness and interest in the product, as well as in energy-efficient equipment generally. This helped to understand the demand for varying types of residential energy-efficient equipment in an evolving market.
 - The evaluation team investigated potential differences in the experiences of nonparticipating customers who signed up for Whole Home after receiving their audit and those who did not to identify what factors impacted their decision to enroll or not.
- **Retrospective NTGR Impacts:** The team asked nonparticipating customers if they installed energy-efficiency measures due to any influence from Xcel Energy but did not apply for a rebate. This information will support potential spillover results among nonparticipating customers.

Appendix B.4 contains the interview guide used for the nonparticipating customer interviews and Appendix C.4 provides results related specific to this research activity.

2.4 Participating Trade Partner Interviews

In addition to customer data collection efforts, the evaluation team conducted in-depth interviews with all three of participating trade partners in 2021 (100% response rate). The evaluation team utilized trade partner interviews to meet both process and impact evaluation objectives. These interviews provided insights on the following topics:

- **Product Experiences:** The evaluation team asked trade partners about their motivations to become product trade partners and apply for rebates. This helped better understand why they wanted to participate and if any particular product elements drove participation. The evaluation team discussed participating trade partners' experiences and satisfaction with various aspects of the rebate process.
- **Trade Partner Engagement:** The evaluation team assessed how trade partners became aware of Whole Home to better understand how participating trade partners learn about product rebates.
- **Retrospective and Prospective NTG Impacts:** The evaluation team asked questions on the influence or impact the product had on their decision to install and/or recommend energy efficiency measures. The evaluation team also asked if the trade partner changed their business strategy or model as a result of the product's offerings.

2 Evaluation Overview & Respondent Characteristics

The evaluation team interviewed all three participating trade partners in 2021, each of whom were insulation contractors. We spoke with two business owners who were hands-on in the job to run the day-to-day company operation and an office manager that has been with the company for 10 years and works closely with the rebate process. Two trade partners perform audits, while one trade partner does not but refers customers to a partner contractor to conduct audits.

Appendix B.5 presents the interview guide used for the participating trade partner research, and Appendix C.5 provides results specific to this research activity.

2.5 Nonparticipating Trade Partner Interviews

In addition to the participating trade partner data collection efforts, the evaluation team conducted eleven interviews with nonparticipating trade partners to seek input on ways to successfully engage trade partners who do not currently participating in Whole Home. For the purpose of this research, we defined three categories of nonparticipating trade partners: (1) Xcel Energy's trade partners for other products (e.g., stand-alone products) who are not Whole Home Efficiency product-qualified trade partners, (2) those who participated in the Whole Home product in the past but dropped out of the product in 2021, and (3) trade partners who signed up to be a qualified Whole Home trade partner but have never completed any projects through the product. Additionally, the evaluation team attempted to reach trade partners with a variety of specialties, including air sealing and insulation, and HVAC.

The evaluation team used trade partner interviews to meet both process and impact evaluation objectives. These interviews provided insights on the following topics.

- **Trade Partner Engagement:** The evaluation team explored why trade partners chose not to participate in the Whole Home product and what perceptions and barriers led to not engaging with the product. Specifically, the evaluation team asked insulation contractors what (if any) product-related or market-related challenges caused them to leave the program, probing for the impact of recent program design changes. Whole Home does not have any currently-participating HVAC contractors, so the evaluation team also asked what specific barriers HVAC contractors faced that prevented them from participating in the product. The evaluation team asked questions to help understand barriers that prevented trade partners of varying specialties from collaborating on projects within the Whole Home product, and whether there are opportunities to encourage collaboration.
- **Retrospective and Prospective NTG Impacts:** The evaluation team asked questions on product attribution (i.e., the impact the product had on their decision to install and/or recommend energy efficiency measures).

The evaluation team completed interviews with four non-participating HVAC trade partners, four trade partners who previously participated in the product, and three trade partners who are signed up as eligible Whole Home trade partners, but who have never completed a project through the product.

Appendix B.6 presents the interview guide used for the participating trade partner research, and Appendix C.6 provides results specific to this research activity.

2.6 Peer Utility Benchmarking Interviews

Last, the evaluation team interviewed representatives from five peer utilities. The objective of the peer utility benchmarking task was to understand how peer utilities approached key issues related to implementing programs to install energy efficiency measures in residential homes. Our findings were

2 Evaluation Overview & Respondent Characteristics

informed by interviews with eight program managers at five utilities. We selected these utilities, because they have comparable territories and programs to the Xcel Energy Whole Home Efficiency Product. Specifically, the peer utility selection was based on one or some of the following criteria:

- Comparable program designs (e.g., programs that are part of Home Performance with ENERGY STAR®, similar programs but with different eligibility criteria)
- Comparable territories (e.g., geographically located in the southwest United States, similar number of customers, and similar number of small businesses in territory)
- Other programs known to have best practices or tools Xcel Energy is interested in pursuing.

These interviews generally focused on the same discussion topics explored in the interviews with Xcel Energy customers and trade partners but emphasized the following research objectives specific to peer benchmarking interviews:

- **Customer Engagement and Experience:** Product staff and the evaluation team were interested in understanding how other utilities manage customer engagement, including monitoring complaints and tracking and motivating customer engagement at different phases of the process.
- **Trade Partner Engagement and Experience:** The evaluation team and product staff wanted to investigate how other utilities assist existing trade partners in becoming product-qualified trade partners and how to keep trade partners actively engaged throughout the process. Additionally, the evaluation team asked peers about their program eligibility criteria, and whether they have multiple paths of participation through their programs – with and without an audit.
- **Market growth:** The evaluation team also gained insights from benchmarking questions designed to identify what peer program representatives felt were opportunities for future growth.

Four of the five peer programs in the benchmarking study are under the Department of Energy’s Home Performance with ENERGY STAR program framework. The peer programs are administered by utilities in five different states with three electric utilities and two dual electric and gas utilities. Table 2-3 outlines background information for each peer utility interviewed and their respective residential rebate programs.

Table 2-3. Peer Utility Program Design Overview

Program Sponsor	Program Name	Geographic Region	Fuel Type
Utility A	Home Performance with Energy Star	West	Electric
Utility B	Home Performance with Energy Star	South	Electric
Utility C	Home Performance with Energy Star	South	Electric
Utility D	Home Performance with Energy Star	Midwest	Electric and Gas
Utility E	Home Energy Assessment	Northeast	Electric and Gas

Appendix B.1 presents the interview guide used for the peer utility research, and Appendix C.1 provides results related specifically to this research activity.

3 Impact Findings

A central component of this evaluation was the estimation of the net-to-gross ratio (NTGR) for the Xcel Energy Whole Home Efficiency Product in Colorado. For DSM products, the NTGR is a metric that estimates the influence of the product on the target market. A NTGR of 0 indicates that the product has no influence on customer participation, indicating that customers are full free-ridership. A NTGR of 1 means that there is no free-ridership among participating customers, and they are fully influenced by the product's activities. It is used both as a benchmarking indicator of effectiveness and to adjust reported gross energy savings to account for energy efficiency that would occur in the absence of the product. NTGR results can indicate opportunities for Xcel Energy to adjust the design and implementation of its products to increase the cost-effectiveness of both individual products and the entire portfolio. The NTGR includes several factors that create differences between gross and net savings, such as free-ridership and spillover. Prior to 2023, Whole Home used an overall NTGR of 1.16 for all measures based on a prior evaluation.

TRC estimated a retrospective NTGR based on data reported by customers and trade partners. The participating customer and trade partner populations for this product are relatively small, so the evaluation team conducted an in-depth analysis of qualitative responses from participating customers and participating trade partners, in addition to quantitative data, to better understand the product's influence. The evaluation team then recommended prospective NTGRs based on potential changes to the product's design and market conditions. Note that an NTGR of 1.00 or above may not be achievable in all cases, as eliminating all free-ridership may not be feasible for a product operating at significant scale. In addition, a variety of factors, including the maturity of the product, the maturity of the technologies it promotes, product intervention strategies, and cross-product coordination strategies, affect the likelihood of free-ridership. The evaluation team has taken care to present NTGR results with this context in mind.

This section presents:

- **Key Impact Findings** – presents the recommended NTGR based on the evaluation team's synthesis of findings from market actors
- **Retrospective Net-to-Gross Ratio Inputs** – presents qualitative and quantitative data that support the NTGR estimations
- **Prospective Net-to-Gross Considerations** – presents findings the evaluation team considered when recommending its prospective NTGR
- **Peer Utility Net-to-Gross Comparisons** – presents NTGR ratios across peer utilities included in this evaluation

The approach to estimate the NTGR can be found in Appendix B.

3.1 Key Impact Findings

This section presents a summary of the key findings from the impact evaluation for the Colorado Whole Home Efficiency Product, including retrospective and prospective NTGR recommendations. The evaluation team provides estimated retrospective NTGRs based on the quantitative and qualitative results from data collection efforts. Because the population size for the product is small ($n = 16$), qualitative feedback played an important role in the analysis, in addition to typical quantitative indicators. We then recommend a prospective NTGR based on potential changes to product design and the Whole Home measures in the residential market.

3.1.1 Retrospective Net-to-Gross Ratio

The evaluation team weighted results by product savings to estimate an overall retrospective NTGR of 0.76 for the Whole Home product. We estimated this score based on data collected from participating customers, nonparticipating customers, participating trade partners, and nonparticipating trade partners.

To estimate the NTGR, the evaluation team took the following steps:

- The evaluation first estimated unweighted free-ridership ratio to be 0.41 for the product. We based these values on participating customer in-depth interviews. We found that trade partner recommendations and home energy audits were highly influential on participating customers' decisions, as three quarters of them rated their contractor's recommendations and home energy audits as a "very influential" product factor.
- The evaluation team weighted these results to be representative of the sample of participating customers by kWh and made adjustments for quantity and timing of measure installation, which updated the free-ridership score estimate to 0.24.
- The evaluation team also analyzed spillover to determine if any interview respondents installed additional energy-efficient equipment as a result of participating in Whole Home without receiving an Xcel Energy rebate for those additional measures. The evaluation team found no evidence of quantifiable spillover associated with the product.
- The evaluation team did not include an adder for market effects to the NTGR. Participating trade partners did not report that the product was influencing their business beyond influence already captured by Xcel Energy products.
- To calculate the overall NTGR, the evaluation team subtracted the free-ridership ratio from 1.00. This brings the **overall retrospective NTGR to 0.76**. Section 3.2 includes detailed methodology for our NTGR estimation.

3.1.2 Prospective Net-to-Gross Ratio

Based on evaluation results, and assuming no product design changes are made, TRC recommends Xcel Energy apply the retrospective NTGR of 0.76 for the Whole Home Efficiency Product prospectively as well. However, if evaluation recommendations are implemented, the evaluation team recommends a prospective NTGR of 0.83. Specifically, we recommend an adder of 0.02 to the NTGR if Xcel Energy implements suggested updates to Whole Home rebates and another additional 0.05 to the NTGR if the product implements recommended outreach and marketing strategies.

The following section provides the detailed findings and evidence from each research activity that informed the key findings presented here.

3.2 Retrospective Net-to-Gross Inputs

For the Whole Home evaluation, the evaluation team adjusted the approach outlined in the Illinois TRM, because the population size is relatively small for this product. Whereas other evaluations rely solely or primarily on quantitative data from participant interviews, for this research we also conducted a thorough analysis of qualitative responses from participating customers and participating trade partners to get a better overall picture of what the product's influence looks like. As described in the approach section, the recommended retrospective NTGR for Whole Home is based on three primary data inputs: the Free-

Ridership Ratio, the Spillover Ratio, and the Market Effects Adder. This section explores each of these results in more detail, including qualitative data that support the results.

3.2.1 Free-Ridership Results

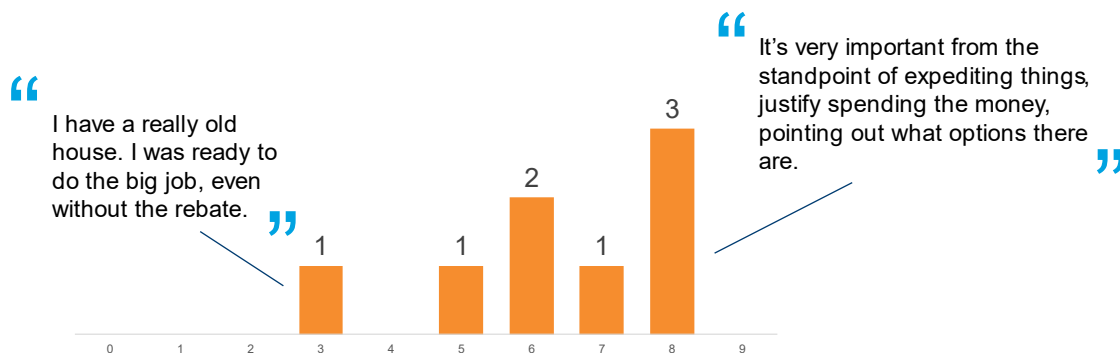
This section presents results related to the four metrics the evaluation team used to estimate the final weighted free-ridership value of 0.24 (e.g., Product Influence Score, the No-Product Score, Timing Adjustment, and Quantity Adjustment).

Product Influence Score

The evaluation team estimated the unweighted overall Product Influence Score for the Whole Home Efficiency Product to be 0.63. To estimate this number, we asked respondents to rate the overall influence of the product on their decision to make energy-efficient upgrades in their home on a scale of 0 to 10, where 1 meant “Not at All Influential” and 10 meant “Very Influential.” This unweighted average score is does not include adjustments from the qualitative findings.

Figure 3-1 shows the distribution of responses for this score. A score closer to 0 indicates the product has a low level of influence. Scores fell roughly in the middle, ranging from 3 to 8, meaning no customer would be considered a “100%” free-rider (with a score of 0) and no customer was a “0%” free-rider (with a score of 10). This indicates that the product is moderately influential, but that there is opportunity to expand or strengthen that influence.

Figure 3-1. Overall Product Influence

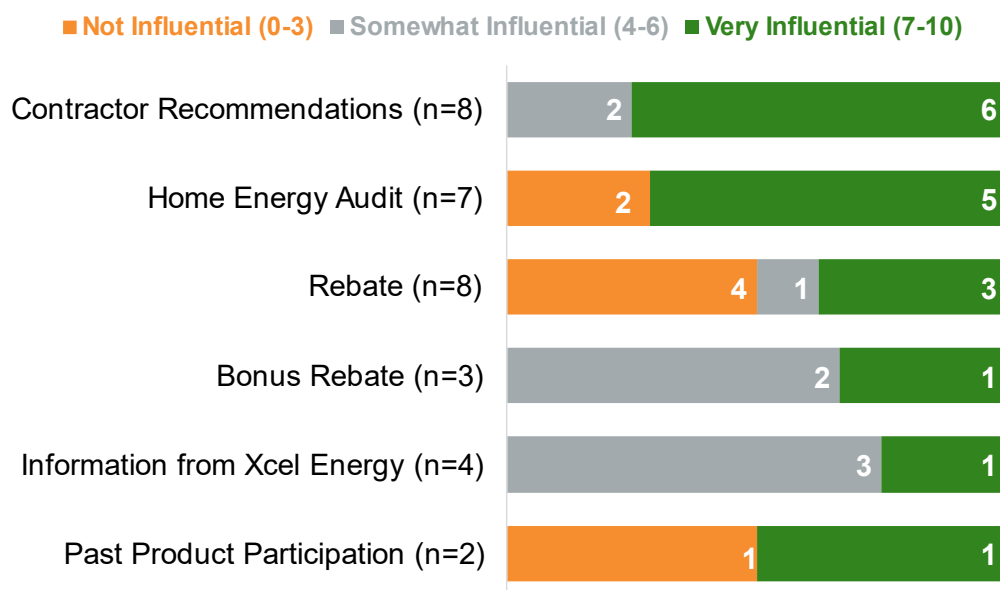


The evaluation team also asked respondents to rate the overall influence of various product elements on their choice to install high-efficiency equipment on the same 1-to-10 scale. Figure 3-2 below shows the scores for each product component. The number of respondents attributing significant influence for a particular component have been shown in green, while the percentage of respondents attributing little influence for a component have been shown in orange. Respondents rated contractor recommendations and home energy audits as the components most important to their decision to install Whole Home-qualifying measures.

One participating customer provided the following statement about their auditor:

“[during the audit process] he found a whole bunch of technical stuff I've never really thought about... and I think he gave us a really long report of all the summary of everything that could be done and some of the things were really expensive and some of the things were cheaper and made more sense to us.”

Figure 3-2. Product Components by Degree of Influence



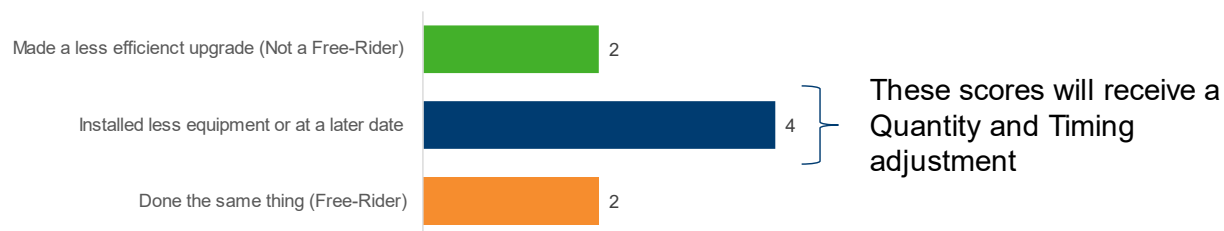
The Product Influence Score of 0.63 indicates that Whole Home played a moderately influential role in customer decisions to install high-efficiency equipment through the product. The Product Influence Score does not take into account what would have happened in the absence of the product; thus, it typically underestimates free-ridership and is balanced by the No-Product Score, discussed in the next section.

No-Product Score

The evaluation team estimated the average unweighted No-Product Score to be 0.55. The No-Product Score is a measure of how likely customers are to have installed identical equipment without the influence of the product. In contrast to the Product Influence Score, which asks how influential the product was on a customer's decision to install equipment, the No-Product Score asks whether that decision would have been different absent the product.

To estimate this score, the evaluation team asked participating customers about the likelihood they would have completed the exact same projects without the product. As shown in Figure 3-3, most (50%) of participating customers reported they would have installed fewer measures or completed the project at a later date without Whole Home. Two out of eight respondents indicated that they would have installed lower efficiency measures without the product, indicating that they were not free-riders. The remaining two respondents said they would have completed the exact same projects in the absence of the product, suggesting high free-ridership for those participants. Overall, the participating customer No-Product Score suggests that the Whole Home Efficiency Product is influencing customers to install higher efficiency measures than they would have otherwise, which is in-line with Whole Home Efficiency requirements.

Figure 3-3. No-Product Score



The evaluation team averaged the Product Influence Score and the No-Product Score together to estimate an initial free-ridership score for each participating customer respondent.

Quantity & Timing Adjustments

Quantity and Timing Adjustments represent the influence a product has to encourage customers to either install a greater number of energy-efficient measures or to install them sooner than they would have otherwise. Two customers reported they completed their projects sooner than they would have without the product, so both these customers received a timing adjustment to their influence score.

The product influenced two customers to install more equipment than they would have otherwise (air sealing for one customer and a smart thermostat for another customer). These customers received a quantity adjustment to account for this influence.

Free-Ridership Adjustments Due to Qualitative Responses

Due to the small sample size, the evaluation team conducted in-depth interviews with participating customers, rather than surveys. This allowed us to use in-depth qualitative responses to better understand the story of how the product influenced customers to make energy-efficient upgrades to their homes. To incorporate these stories, we reviewed all qualitative responses and made adjustments to participating customers scores to reflect the influence of the product based on both qualitative and quantitative information.

Qualitative responses from participating customers underscored the influence of the home energy audit and contractor recommendations on participating customers. The evaluation team heard that customers were influenced by trade partner recommendations, but less so by the product's design. The audit and trade partner recommendations did motivate the customers to make upgrades—customers rely on trade partners for suggestions and advice—but the trade partners interviewed only promoted the product if they thought the customer had three insulation projects they could install themselves. For example, one customer said, “The contractor was very credible, he helped educate us in terms of the possibilities and the cost benefits. Entirely influential on our decision to go ahead.” Trade partners though, tend to avoid recommending the product when they cannot make all three upgrades:

“If they do need wall insulation, attic insulation and air sealing, I will recommend [the product], but [the bonus] is really not that much extra money. It doesn't make sense to tell every single client about the product, especially if they don't qualify for it.”
– Participating Trade Partner

As a result, the product's influence on customers is limited, because trade partners are not recommending the product in all circumstances where a customer is qualified. This may be due to the fact

that, sometimes, because both the customers and trade partners do not fully understand the product. This limits participation and increases the impact of free-riders on the product's overall free-ridership.

Final Free-Ridership Ratio

To develop the final free-ridership score, the evaluation team weighted each individual free-ridership score by the proportion of its associated savings within the sample, so that the score would be representative of population-level savings. In other words, respondents with projects with a larger share of total kWh were weighted more heavily, as they had more influence on total product savings. With the sampling weights applied, **the free-ridership ratio came out to 0.24.**

3.2.2 Spillover Results

Spillover is a measure of the amount of energy savings that occur due to the product that are not captured in the product's claimed energy savings. The evaluation team found no evidence of quantifiable spillover for the incentives offered through the Whole Home Efficiency Product. The following sections outline findings relating specifically to participating customer and nonparticipating customer spillover for Whole Home.

Participating Customer Spillover

In the previous evaluation, the high NTGR of 116% was driven by a 30% adder for spillover. This old spillover was primarily attributed to air conditioning quality installation (QI) practices influenced by Whole Home-specific trainings and other resources delivered through the product. Currently, the product is not seeing any participation through HVAC measures and so the QI-related spillover would now be captured through the HVAC rebate product. Additionally, spillover decreases over time as energy-efficient equipment and quality installation practices become more standard. As a result, it is not entirely unexpected that the evaluation team found no evidence of participating customer spillover. Two customers reported that they went on to install more energy-efficient measures but indicated that the product was not influential in their decision to install that equipment.

Nonparticipating Customer Spillover

For nonparticipating customers, all but one nonparticipating customer were unaware of the Whole Home Efficiency Product, so any spillover-eligible upgrades they made would be attributed to Home Energy Audits or Home Energy Squad. The one nonparticipating customer who was aware of the product had contacted an Energy Advisor through the implementer but none of the upgrades they decided to make were eligible for either Whole Home or for other stand-alone rebates.

3.2.3 Market Effects

In addition to free-ridership and spillover, the evaluation team also analyzed market effects for the Whole Home Efficiency Product. We found no evidence of market effects occurring and did not apply any additional adder to the free-ridership score to account for market effects. Trade partner respondents reported they do not feel the product is highly influential to their overall sales or business practices. Trade partners are influencing customers to participate in the product, but do not think the product is influencing them to do anything not already captured by Xcel Energy. These trade partners said they would not change their business practices or sell fewer energy efficient projects if the product did not exist, because they could go through the stand-alone product.

3.2.4 Retrospective Net-to-Gross Ratio

Overall, the evaluation team found that the product impacted participating customers' decisions to make bundled energy-efficient upgrades to their homes. Using the net-to-gross formula, shown in Equation 3-1 below, we estimated the NTGR to be 0.76. This number is based on the free-ridership ratio of 0.24, which was driven by the influence trade partners and home energy audits had on customers when deciding what measures to install. Free-ridership most often occurred when participating customer respondents reported that they would have completed the exact same projects without the product. The evaluation team did not find any evidence of spillover or market effects.

Equation 3-1. Residential Whole Home Efficiency Net-to-Gross Ratio

$$NTGR = 1 - (Free - Ridership) + (Spillover) + (Market Effects)$$
$$0.76 = 1 - (0.24) + (0) + (0.01)$$

3.3 Prospective Net-to-Gross Ratio Considerations

The evaluation team examined market conditions and possible product changes to recommend a prospective net-to-gross ratio. Our findings indicate that there are opportunities to increase product influence by implementing the changes currently under consideration by the product staff, as well as the recommendations in this report. The evaluation team recommends a **total prospective NTGR of 0.83 if the following recommendations are implemented.**

- Changes currently being considered by Xcel Energy:
 - Pay-for-performance (P4P) for insulation measures
 - Bundling heat pump with insulation upgrades for an additional rebate
- Evaluation Recommendations:
 - Increase bonus rebate after completion of projects
 - Market directly to customers who complete audits, focusing on bonus rebate
 - Repeat contact with nonparticipants and partial participants – after they complete one project, send a reminder to do another, and support customers with following-through on different measure types
 - Conduct outreach to trade partners to correct misunderstandings related to project eligibility and rebate receipt (described in greater detail in Chapter 4.)

While increases in rebate amounts through P4P, bundling heat pumps, and increasing the bonus rebate are likely to increase participation in the product, the evaluation team felt that it would have minimal impacts to decreasing free-ridership and thereby increasing the NTGR. If Xcel Energy implements these increases and updates to rebates, TRC recommends an adder of .02 to Retrospective NTGR. The evaluation team believes the product could increase its influence the most through marketing and outreach. If Xcel Energy implements improvements to marketing efforts (suggested above), we recommend an additional adder of .05 to Retrospective NTGR. Combined these two adders, come to 0.83. We provide more details on recommendations later in Chapter 4 but expect that increasing awareness, improving the experience with customer support, and correcting misconceptions that create a barrier to trade partners promoting the product, will be most impactful in increasing influence.

3.4 Peer Utility Net-to-Gross Comparisons

The retrospective NTGR is lower than most of the peer programs that the evaluation team examined through this research, as shown in Table 3 1. This is likely due to the greater customer and trade partner engagement efforts described by these utilities and reported in more detail in Appendix C-1.

Table 3-1. Peer Utility Net-To-Gross Ratios

	Xcel Energy	Utility A	Utility B	Utility C	Utility D	Utility E
Program Overall	0.76	1	N/A	0.94	0.90 (Stipulated)	N/A
Year	2021	2021	2021	2021	2021	2021

4 Process Evaluation

TRC conducted a process evaluation to determine how Xcel Energy can optimize the design and delivery of the Whole Home Efficiency Product to its customers. The specific research objectives of the process evaluation were as follows:

- Understand how best to engage customers and further motivate customers to participate.
- Identify the sources of the product's challenges with trade partner engagement.
- Investigate participating customer and trade partner product experiences.
- Explore the opportunities for future market growth.

To accomplish these objectives, the evaluation team elicited feedback from product staff, participating and nonparticipating customers, and participating and nonparticipating trade partners in Xcel Energy's Colorado service territory. We also interviewed representatives from peer utilities running comparable programs. This section presents key findings from the process evaluation and detailed findings relating to each evaluation objective. Sub-sections for each objective include data from all relevant data collection efforts. Our synthesis of findings places an emphasis on helping Xcel Energy to interpret research findings and identify actionable opportunities for improving product operations. These findings, along with findings from the impact evaluation, inform the conclusions and recommendations presented in the final section.

4.1 Key Findings

TRC found that participating customers were satisfied with the Whole Home Efficiency Product, but nonparticipating customers were unaware of the product. In general, more outreach and marketing stand to make a large impact in driving participating, but first product staff and the implementer will need to agree on resources, budget, and objectives to improve the product's outreach efforts. The evaluation team has provided additional key findings from the process evaluation research below, broken out by research objective:

- **Customer Engagement:** Most customers were not made aware of the Whole Home offering through the implementer or by product staff. Half of participating customers learned about the product from their trade partner, and many were unaware of the bonus rebate available for installing multiple measures. Several participating and nonparticipating customers learned of Whole Home or the audits through neighbors or friends.
- **No Engagement with HVAC Measures:** Currently, customers are only participating through air sealing and insulation measures, and there is no participation from HVAC contractors. HVAC contractors see the audit as a barrier to participation and are hesitant to promote Whole Home to their customers as a result.
- **Unfamiliar with Product Processes:** Participating customers were unfamiliar with product processes or rules for participation, suggesting opportunity to drive participation in different measure categories by increasing outreach to customers through the implementer.
- **Engagement Opportunity Post-Audit:** Nonparticipating customers who completed the audit should be considered "hot leads" for the product, because they are motivated and planning to

install energy-efficient measures in their homes. They have also completed the initial requirement for participation in Whole Home by completing the audit.

- **Proactive Outreach by Product Staff:** Both participating and nonparticipating customers indicated that proactive outreach by product staff or the implementer, as well as improved resources, such as Xcel Energy website, could be leveraged to improve customer understanding of energy efficiency options for their homes and opportunities to participate in the product.
- **Engagement through Word-of-Mouth and Trade Partners:** These suggestions align with peer utilities, who described word-of-mouth communication and promotion by trade partners who are knowledgeable about the product as the most effective strategies to market their products.
- **Trade Partner Engagement:** Trade partners described some misunderstanding about product eligibility and participation, which implementers similarly described during staff interviews. Trade partners also expressed some frustration with the process of applying for Whole Home rebates. For example, all three participating trade partners were either unfamiliar or dissatisfied with the recent product changes, including removing the insulation requirement and name change. Two of three participating trade partners indicated a need to have better communication with the implementer, including communicating what the trade partner can offer to customers through the Whole Home product.
- **No Cross-Specialty Collaboration:** Trade partners rarely worked with contractors from other specialties and are reluctant to make referrals. Insulation contractors described this as a reason that they only tell customers about the product if they can complete all three projects themselves. This finding demonstrated a fundamental product challenge as cross-specialty collaborations among trade partners are critical in offering customers with “whole-home” solutions.
- **Competing Rebate Products:** Additionally, Xcel Energy captures most of the projects that qualify for (but do not go through) Whole Home through the stand-alone products like insulation and air sealing. Trade partners generally expressed a preference for a more streamlined process for participating in rebate products, which indicates an opportunity to streamline the multiple products and avoid competing for savings by combining residential rebates through a broader, portfolio-level reorganization of incentives.
- **Product Experiences:** Participating customers were most satisfied with factors related to trade partners’ roles, including satisfaction with the process of finding their trade partner, trade partner performance (e.g., knowledge and professionalism), installation of equipment (e.g., effectiveness and cleanliness), and equipment performance (e.g., improved comfort and decreased energy bill as recommended). All three participating trade partners were motivated to participate in Whole Home by a desire to help their customers improve the efficiency and comfort of their homes while getting the best available rebates. However, these trade partners had different overall satisfaction ratings with the product, ranging from very dissatisfied to very satisfied.
- **Unaware of Bonus Rebate:** All participating customer respondents were unaware of the bonus rebate, which is one of the key features that differentiates Whole Home from the stand-alone products. They primarily described receiving the rebate as a single check from Xcel Energy or a discount of the total project cost on the invoice from the trade partner, who provided minimal (if any) explanation about the rebate breakdown. Additionally, participating trade partners often do

not specifically mention the bonus rebate to customers, because they do not feel the additional 10% is very motivating for customers.

- **Support from Product Staff:** Two participating trade partners were satisfied with Xcel Energy product staff. However, two respondents also mentioned that the rebate forms were cumbersome, and they expected more support from the product staff.
- **Market Growth:** There are opportunities for product participation rates to grow. For example, all participating and nonparticipating customers were motivated to improve the overall efficiency and comfort of their homes, which was the objective of and the trade partners' motivation to participate in the Whole Home product.
- **Customer Satisfaction and Recommendation:** Most participating customers were satisfied with the performance of the installed energy efficiency measures. One participating customer particularly mentioned that they have recommended the product to about 20 friends.
- **Increased Requests for Qualifying Measures:** Additionally, trade partners described an increase in project requests both for insulation and HVAC improvements. Peer programs from five utilities also underscored the continuous and growing needs of a whole home approach across the country. Product outreach to customers, training for trade partners, and other support—as proposed in this evaluation—could influence growth in product participation.

The remainder of this chapter presents detailed findings related to each objective of the process evaluation.

4.2 Customer Engagement

The following section describes customer awareness of and engagement with product components. Both participating and nonparticipating customers described difficulty finding information about energy efficiency options for their homes through Xcel Energy's website and had little to no engagement from the implementer or product staff. However, customers who participated in the audit were satisfied with energy efficiency options offered by trade partners. The following section provides detailed findings from participating customers on their engagement with the Whole Home Efficiency Product. This is followed by findings related to nonparticipating customers' awareness of Xcel Energy rebate programs as a whole and their awareness of Whole Home specifically.

ENGAGEMENT DURING AUDIT

"I didn't have much information. I was very much expecting a contractor and eventually an energy audit to educate me on [energy efficiency]. So, **thanks to [trade partner], he invested a lot of time educating me.**"

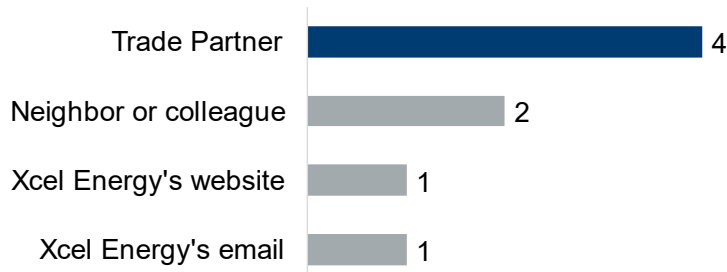
– *Participating Customer*

4.2.1 Product Awareness

As findings from customer and trade partner interviews suggest that auditors did not mention Whole Home rebates during the audit process, there are opportunities for audit providers to leverage rebate discussions with homeowners both before and after the audit process to drive leads. Figure 4-1 presents the information sources where customers first learned about Whole Home. Half of participating customer respondents (n = 4) described hearing about the product through their trade partner, not from the auditor. Other customers heard about the product from a neighbor or colleague (n = 2), Xcel Energy's website (n = 1), and an Xcel Energy email (n = 1). Trade partners are the strongest link between the product and the

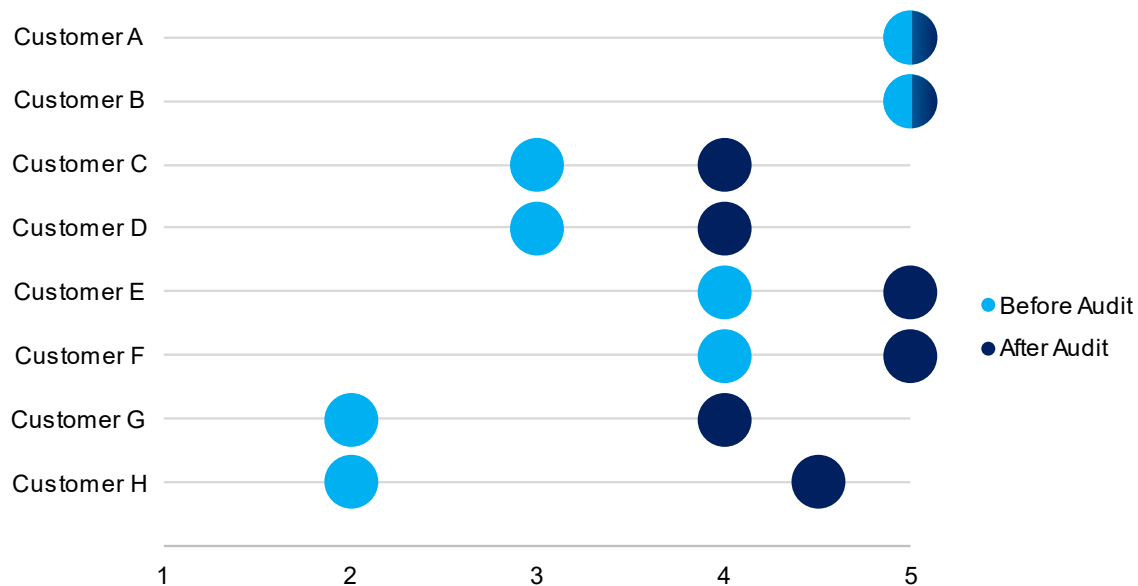
customer, and this finding highlights the importance of ensuring that participating trade partners are knowledgeable about Whole Home and feel supported as they promote it.

Figure 4-1. Sources of Participating Customer Awareness about Whole Home Efficiency



After completing an audit, most customers reported increased familiarity with the options for energy efficiency upgrades for their homes. Only two customers (Customer A and B) reported solid familiarity about energy efficiency options before audit due to family history, such as owning a non-profit that does energy efficiency upgrades for low-income household. Participating customers' familiarity with energy efficiency options increased from 3.5 to 4.6 on average, using a 1-to-5 scale, where 1 meant "Not at all familiar" and 5 meant "Extremely familiar" (Figure 4-2). The audit process is an important and necessary step for customer engagement because increasing customer awareness with measures eligible for Whole Home rebates is critical to product participation and project completion.

Figure 4-2. Participating Customers' Familiarity with Home Energy Efficiency Options

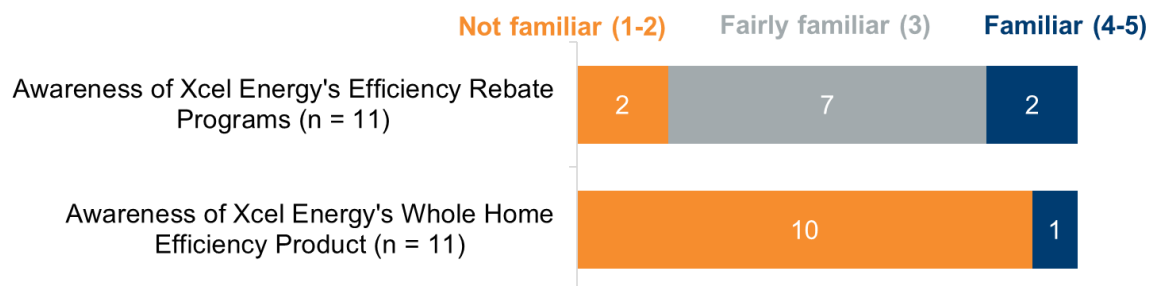


One participating customer whose familiarity with energy-efficient options for their home improved substantially, attributed their improved familiarity to their trade partner's knowledge and expertise. They stated that their trade partner significantly helped educate them about the energy efficiency and rebate options for their homes.

Most nonparticipating customer respondents (7 out of 9) recalled the auditor mentioning rebates during or after their audit, but almost all (10 out of 11) had never heard of Whole Home specifically before

participating in the interview (As shown in Figure 4-3), even though all were eligible for the program after completing a Home Energy Audit or Home Energy Squad visit.

Figure 4-3. Nonparticipating Customer Familiarity with Whole Home Efficiency Product



By completing an audit, participants have completed the requirement for participation in Whole Home and are often motivated and planning to install energy-efficient home upgrades in the future. Most respondents (7 out of 9) were interested in making energy efficiency upgrades in the next five years that would be eligible for Whole Home. These respondents were considering insulation (n = 5), air conditioning (n = 2), and water heating (n = 1). Home energy audits are a critical step in the process to increase customer understanding of energy-efficient options for their homes and to stoke interest in taking the next steps to install energy-efficient measures. Feedback from customers and trade partners about the audit process indicates an opportunity for leveraging leads from the auditor to introduce rebates specific to Whole Home.

4.2.2 Barriers to Customer Engagement

The evaluation team identified five key barriers to customer engagement, including (1) difficulty navigating the product websites, (2) lack of direct outreach from product staff, (3) lack of proactive promotion from trade partners, (4) lack of multichannel campaigns, and (5) limited budget and time for completion. The following subsections discuss each barrier mentioned by customers, trade partners, and peer utilities in more detail.

Difficulty Navigating the Product Website

Nonparticipating customer respondents reported they want to learn about energy efficiency but have trouble finding the information they need. Despite being motivated and spending time conducting personal research on ways to improve the energy efficiency of their homes, these respondents did not come away from their research with familiarity of Xcel Energy's Whole Home offering. Some nonparticipating customers (4 out of 9) struggled to find information on their energy efficiency options for their homes and on the product offering. Two of these customers found it challenging to find a list of product-eligible contractors on Xcel Energy's website and described it as "not user-friendly." The two other respondents suggested Xcel Energy work to increase customer awareness of its rebate offerings to make sure the product is reaching the best audience. Evidence that the website is not currently driving participation in the product is also supported by an earlier finding from participating customers, who mostly participated after learning about the product from sources other than Xcel Energy's product materials (only one out of eight customers learned about the product after conducting personal research through Xcel Energy's website).

"It takes some time and digging to find rebates, instructions, and details on their websites." – Nonparticipating Customer

Lack of Direct Outreach from Product Staff or Implementer

In addition to customers' difficulty in navigating the product websites, trade partners often felt Whole Home was difficult to explain, specifically because of the name change and the audit requirement. They described this as a barrier to greater customer participation in the product. One trade partner disliked the name change ("Home Performance with ENERGY STAR®" to "Whole Home Efficiency"), because there was minimal advertising from Xcel Energy to help the trade partners rationalize the reasons for change as well as to help the customers understand that it was the same product. Another trade partner felt that the audit component was difficult to explain and caused confusion with their customers if they had not already completed an audit.

"Now it's a lot of explaining, if we didn't talk about it ahead of time, it was very possible that they didn't do the [audit] that was needed." – Participating Trade Partner

These trade partners expressed a desire for more customers awareness and felt Whole Home could see increased uptake if it was also marketed directly to customers, rather than relying on trade partners to promote the product. When the product is difficult to explain, trade partner respondents reported they do not talk to their customers about it. If a customer already understands how to participate, because they have received marketing or outreach information, it is simpler for the trade partner to promote the product to them.

Additionally, the findings from peer utility interviews also showed that peer utilities felt that reaching out directly to targeted customer groups was key to increasing customer participation. Four utilities used targeted marketing strategies to customers in relevant demographics, relevant home qualities, and previous product participation. One peer described using email marketing in combination with other home performance-related programs to target customers and increase the likelihood that emails are open and read.

"Internally our most successful [customer awareness strategy] is email marketing... We combine in one email our insulation, windows program or HVAC program, and our Home Performance with ENERGY STAR... We see a really high open rate... to almost 35% increase." – Utility D

Another peer utility representative described using internal data analytics to send marketing emails to customers who are more likely to be interested in participating in their home performance program – like those who had already had an energy audit.

"...internal data analytics group that helps pull that data together and be able to reach out to those customers that have [an energy audit] record." – Utility B

There are several opportunities for Xcel Energy to efficiently promote Whole Home through targeted outreach that peers identified as successful, including co-promotion with other Xcel Energy products and engaging the implementer to market the product to customers who have already completed an audit.

Lack of Proactive Promotion from Trade Partners

All participating trade partners stated that they rarely discuss Whole Home with customers, and they would inform customers about the product only in specific circumstances. Trade partners said they would talk to customers about the product if (1) they were asked by the customer first, (2) they perceived that the customer would be eligible for the rebate, or (3) they thought they could do all three upgrades for the customer. As will be discussed in more detail in the next section, trade partners described barriers that discouraged them from promoting Whole Home more frequently, including confusion around explaining

product components and conflicting rebate offerings with other Xcel Energy products. Despite the lack of promotion by trade partners, participating customers still cited trade partners as the most important source of product awareness. This indicates an opportunity to increase customer engagement and participation by supporting trade partners in overcoming this barrier so they can promote Whole Home more proactively in the future.

Additionally, in 2021, customers only participated through insulation projects – there was no participation through HVAC projects. Most HVAC contractors felt the audit requirement would be a barrier, leading them to rarely promote the product to their customers. The lack of active promotion from both trade partners and implementation staff led to decreases in participation, because the product is not driven by customers with knowledge of the product. For example, one participating trade partner mentioned that they mostly expect customers to learn about the product and recommended measures through the audit process.

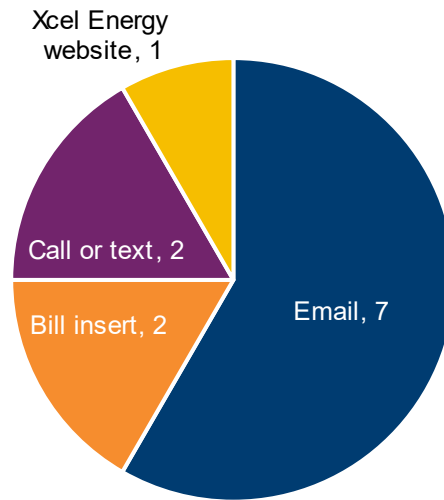
“Sometimes it's an extra effort to think about the third project, because our work is on insulation and air sealing. If there's no third item that we can do on the proposal, we would just do the stand-alone rebates instead of [Whole Home Efficiency].” – Participating Trade Partner

Evaluation findings suggest a need to perform a significant level of outreach to engage customers with Whole Home, including leveraging the implementation team to proactively promote the product. In previous years, the implementer sent emails to customers who completed a Home Energy Squad or Home Energy Audit to promote Whole Home, but this was not done in 2021. Implementer staff said they were switching over their marketing to reflect the name change from Home Performance with ENERGY STAR, but it was unclear to product staff why these marketing updates were still incomplete. Only one participating customer recalled having received a marketing email in 2018 about Whole Home, before the name change, although they also stated that a colleague's recommendation ultimately influenced them to finally participate in the product. Participating customer respondents generally felt they and future customers would benefit from more information and clarity on eligibility requirements and rebate tiers. Without sufficient knowledge about the product, one customer mentioned that it took a while to prioritize the budget for participating in the product. Given the interest of audit participants, one of the straightforward ways to encourage product participation is for the implementer to repeatedly contact audit participants and partial participants to introduce various rebate offerings for both insulation and HVAC measures.

Lack of Multichannel Campaigns

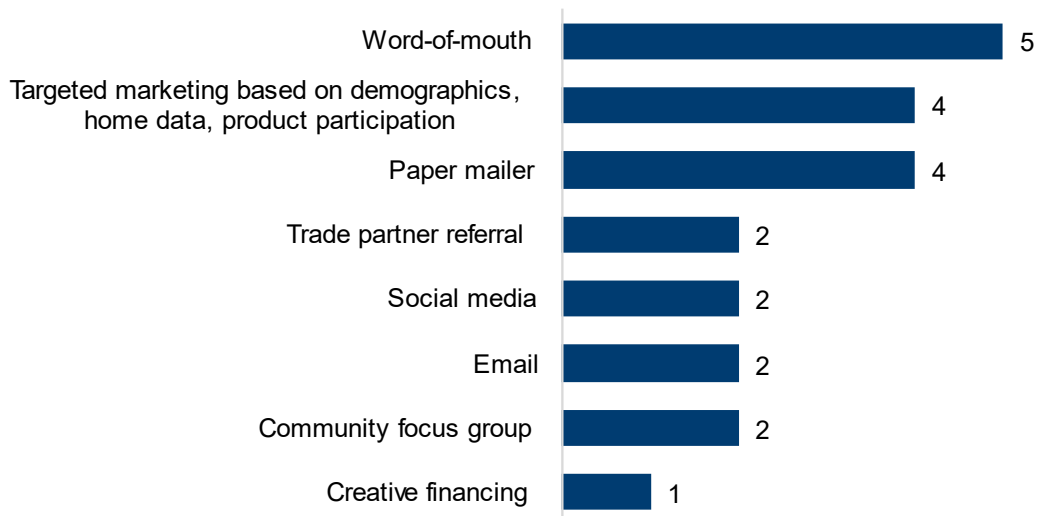
The evaluation team also found that there was limited effort to develop and execute multichannel campaigns for Whole Home. Seven nonparticipating customer respondents cited that they prefer to receive information on saving energy at home from Xcel Energy via email, as shown in Figure 4-4. Other respondents preferred marketing channels included e-bills/bill inserts (n = 2), calls or texts (n = 2), and the Xcel Energy website (n = 1). However, only one out of nine nonparticipating customers (and no participating customer) reported having received a marketing email with information on Whole Home.

Figure 4-4. Preferred Marketing Channels by Nonparticipating Customers (n=11)



Findings from the peer benchmarking study also support the need to leverage multiple channels to promote Whole Home. All peer utility respondents (n = 5) reported using multiple channels to market their products and engage customers, which included a combination of digital (such as email and social media) and print marketing (such as direct mail, bill inserts, news sources, and yard signs/door hangers). The most cited marketing channel used by peer utilities was word-of-mouth, which mainly included active conversation between the trade partners and customers about the program offering, as presented in Figure 4-5.

Figure 4-5. Reported Marketing Channels by Peer Utilities



Limited Budget & Time for Completion

Time and budget could be barriers for customers to install multiple energy-efficient upgrades through Whole Home. While the two-year window did not seem to be an issue for participating customers, most nonparticipating customers (6 out of 10) felt that the two-year window to complete installation could limit their ability to participate in the product. For example, a nonparticipating customer mentioned that it could be challenging to complete projects in two years with a limited budget.

“In two years, when you’re doing expensive stuff, it’s challenging. Two years is not a lot of time when you’re on a limited budget.” – Nonparticipating Customer

Similarly, two participating trade partners also felt that a customer’s ability to complete multiple projects could be limited due to the two-year timeline and their budget constraints within that window. Some participating customers reported the bonus rebate for completing three or more energy efficiency measures was a “nice surprise” but not the deciding factor, as they had prepared a significant budget for home upgrades. Similarly, trade partners did not perceive the bonus rebate as sufficient to motivate their customers to pursue three or more energy efficiency upgrades.

“...\$95 [an example of estimated bonus rebate] is not a huge motivator. I don’t think anybody really cares too much about \$95 when they’re spending \$6,000 to \$8,000 or something on all three of these improvements. It might for folks who have more constraint in their budget, but I don’t see people really saying ‘oh, that’s an awesome 10%.’” – Participating Trade Partner

Additionally, most peer utilities (3 out of 5) do not have any time limitations for completing the energy efficiency upgrades. One peer utility provides a five-year window for completing the projects; after five years, trade partners must conduct a new assessment and start over with the program. On the other hand, one peer utility offers only a 180-day window for completing projects, which the customer agrees upon with the trade partner and program staff. While these findings could suggest that Xcel Energy’s two-year window for making upgrades is short compared to some peer programs and could contribute to barriers to participation that potential customers experience, it is important to consider the impacts the extension of the timeline could have on attribution of savings to the product. As discussed further in Chapter 5, the evaluation team recommends increasing the bonus rebate to further incentivize customers to complete projects within the time window and ensure upgrades can still be confidently attributed to the product. As the product increases in participation by larger measures, such as HVAC upgrades, the product staff could consider revisiting the time window length to determine if it warrants extending.

4.3 Trade Partner Engagement

This section describes findings related to trade partner awareness and engagement with product components. Both participating and nonparticipating trade partners were unfamiliar with the recent product changes, including the name change and removing the insulation requirement. When asked what suggestions they had for increasing participation, trade partners suggested making product design changes, such as improving the rebate structure, adding more qualifying measures, and avoiding asking trade partners to drive cross-specialty collaboration. Based on feedback from trade partners, peers and product staff, the evaluation team found that product implementers are better positioned to facilitate customer participation through multiple measure types than asking trade partner of differing specialties to collaborate with each other. The following section provides detailed discussion around decreased insulation contractor participation, industry-specific barriers to participation, facilitating collaboration between trade partners, and engaging nonparticipating trade partners.

4.3.1 Decreased Insulation Contractor Participation

All three participating insulation trade partners have decreased their participation in Whole Home in the last year, citing product changes over the past several years as a driver – though not the change to remove the insulation requirement. In 2019, the product design was changed to remove the requirement that a customer complete an insulation project to participating in Whole Home Efficiency. While the intent was to remove barriers to customer participation, there was concern that removing this requirement would be looked upon negatively by insulation contractors and could be a cause for decreased participation. When speaking with trade partners, the evaluation team found that no participating trade partner was aware of the remove of the insulation project requirement. This indicates that, because trade partners were unaware of this change, it did not affect trade partners' businesses and was not a driver of decreased participation by insulation contractors. In fact, many insulation contractors described an increase in business in the last year, driven by emergency situations like the Marshall Fire and an increase in the number of customers wanting to improve the comfort of their home (described in further detail below).

"I'm not really aware of that (removing the requirement to include insulation measure) because we're an insulation company [and those are the only projects we do]."

–Participating Trade Partner

After hearing that the product removed the requirement to include insulation measure, the trade partners did express confusion and disagreement with the changes. They felt that air sealing and insulation improvements as part of a whole home approach are often the most cost-effective measures and are "low-hanging fruit" – so they were unsure why these measures would not be required.

Participating trade partners seemed to be aware of the name change from "Home Performance with ENERGY STAR" to "Whole Home Efficiency", although they did not necessarily use the new name to market the product. A participating trade partner mentioned that the recent product rebranding to "Whole Home Efficiency" was difficult for them because they were used to the "Home Performance with ENERGY STAR" name, and felt it was easier to market and explain the product to customers when it was associated with the recognizable name brand. The trade partners also did not understand the need for these changes and felt they needed more explanation from product or implementer staff, and they wanted support with strategies for communicating these changes to customers. Two trade partners were not clear that the new product name did not signify changes to the product design.

"...These people (customers) are not turned on by it (the new product name) ... They still like the Home Performance with ENERGY STAR situation... We try and tell them that it's the same thing, but it's just not accepted. 'I don't know what this is', 'why aren't we doing home performance anymore?'... That's what I get (responses from customers)." – Participating Trade Partner

Lastly, several participating trade partners said they had decreased or stopped participating because the product removed lighting measures from the eligibility list. One participating trade partner said the removal of lighting from the product made it less straightforward to identify three qualifying projects for their customers. As previously described, some participating and previously participating trade partners said they would not suggest the product to customers if they could not complete three or more measures for the customer, thinking that they had to do all three upgrades themselves to qualify in the product or being reluctant to work with other contractors to help customers complete three upgrades.

A misunderstanding of product design drove some previously participating trade partners to no longer participate in the product. Primarily, trade partners said they would not suggest the product to customers if they couldn't complete all three of the upgrades for the customer. Some trade partners would not

recommend the product if they couldn't complete all three because they felt that coordinating with another trade partner was a hassle or thought they needed to fill out additional rebate forms. Other trade partners thought they had to do all three upgrades themselves to qualify in the product. Similar to participating trade partners, some previously participating trade partners said that they reduced their participation after the product removed lighting, because they did not have a third qualifying measure that they could easily install.

Participating trade partners also described limited interactions with the implementer. Two of three participating trade partners indicated a need to have better communication with the implementer. One trade partner expected to have more communication with the implementer about what the trade partner can offer to customers through Whole Home. This trade partner also said they would directly reach out to Xcel Energy's product staff rather than contacting the implementer because they did not have an established relationship with the implementer. One trade partner did not recall working closely with the implementer other than through a quality control audit that was conducted on their work. Overall, trade partner respondents did not receive the support and education they felt they needed to promote the product. This presents an opportunity for product staff to work with the implementer to more actively engage with trade partners to provide the support needed to increase the influence of the product.

4.3.2 Industry-Specific Barriers to Participation

In the past several years, Whole Home has only had participation by insulation contractors. Many of the eligible measures in Whole Home are HVAC-specific, but no HVAC contractors have recently participated in the product. To better understand how to engage HVAC contractors in the program, the following section examines the barriers to participation described by both HVAC and insulation contractors.

Barriers to HVAC Contractor Participation

HVAC contractors described "replacement on failure" as the biggest industry-specific barrier to participation. Two trade partners felt the prevailing business model of the HVAC industry was a barrier to participation, because HVAC equipment is typically replaced on failure, and it is difficult to motivate customers to replace their HVAC systems early. One felt that the HVAC business model would need to change in order for them to fully participate in Whole Home, which would require higher rebates and incentives for trade partners.

Nonparticipating HVAC trade partners view the audit component as the main barrier to participating in the product, as the replacement on failure model, means that nearly all replacements are urgent needs. Three nonparticipating HVAC trade partners stated that having to do an audit first during an emergency would be a challenge to participating in the product. One said that it would be a barrier to their sale, as they would have to refer the customer to someone else (the auditor). Another said that they saw fewer customers from Home Energy Squad Planner visits after the COVID-19 pandemic and felt that customers are only trying to complete necessary upgrades. The third participating trade partner also mentioned barriers from the customers' perspective of having to think of which upgrades to make, and the time-consuming process of going to multiple contractors to qualify for Whole Home. One trade partner who previously participated in Whole Home and one who signed up but never participated both felt that the initial cost of the audit was a barrier.

Barriers to Insulation Contractor Participation

Previously participating insulation trade partners described several barriers specific to the insulation industry, including significant increases in insulation projects due to work-from-home situations and, in the event of the Marshall Fire, allowing customers to participate in different products with higher rebate

amounts. Two trade partners mentioned that customers with homes impacted by the Marshall Fire were repairing their insulation through the short-term rebates offered by Xcel Energy and not going through Whole Home, because they would receive higher rebates. Additionally, one trade partner mentioned that their business has been very busy and substantially increased their cost of service in recent years. They attributed this to the increase in more customers who work from home who want to improve the efficiency and comfort of their homes, because they spend more time there. One trade partner felt the Inflation Reduction Act could impact how customers complete upgrades to capitalize on incentives offered through the legislation. However, the trade partner felt that it may not align with Whole Home's two-year project completion requirement:

“The Inflation Reduction Act is going to motivate people to do a little bit each year because they can max out their rebate every year by doing some other little thing. Not sure how all that's going to [play] out, but that's almost counterproductive when you want to incentivize people to do a lot at once. It doesn't line up very well with that two-year requirement of trying to get everyone to do all their projects and that could potentially impact things.” – Nonparticipating Trade Partner

4.3.3 Facilitating Collaboration between Trade Partners

Few trade partners felt able to facilitate collaboration with other trade partners of differing specialties without support from product staff or implementers. Participating insulation contractors said they were not aware of contractors in other specialties whom they felt comfortable referring their customers to. Only one currently participating trade partner felt they knew a good trade HVAC contractor to whom they could refer their customers. This trade partner felt concerned that other contractors might not be up to their standards.

“There's only one HVAC contractor I know that measures the windows to figure out their calculation. Everybody else is kind of guessing.” – Participating Trade Partner

Similarly, nonparticipating trade partners said they rarely refer customers to other contractors and are hesitant to do so. Two trade partners did not know other participating contractors to refer customer to, which made it difficult to coordinate projects. Two nonparticipating trade partners felt uncomfortable referring customers to other contractors, because a bad referral could reflect poorly on them, and they did not want to be held responsible for other contractors' bad work.

While some trade partners were hesitant to make connections to other contractors, others were interested in receiving additional support from Xcel Energy on facilitating referrals. Two HVAC contractors indicated that Xcel Energy could support connections between trade partners from different specialties by hosting meeting to exchange information. One of these trade partners thought they could use this meeting to exchange information and then have estimated prices from other contractors ready to give customers. Additionally, one participating trade partner suggested that it could be more efficient to collaborate on rebates through the contractors' office managers instead of through the contractor themselves.

4.3.4 Engaging Nonparticipating Trade Partners

Previously participating trade partners said they would participate in Whole Home in the future if the product offered higher rebates, providing additional benefit to them and to their customers over and above what is provided by the standalone products. Three previously participating trade partners stated that they would pursue rebates through the product in the future if there were higher rebates specifically for installing multiple projects, offering additional benefits to the stand-alone products. They consider these additional benefits necessary because they are most comfortable with and knowledgeable about

the standalone products and are inclined to continue offering those rebates to customers if Whole Home does not offer a greater benefit.

Other suggestions that nonparticipating trade partners mentioned included:

- Bringing back lighting measures to the product (n = 2)
- Including more qualifying upgrades that fall under their specific services, such as more types of insulation or additional electric measures (n = 2)

4.4 Product Experiences

This section describes participating customer and trade partner experiences with various product components. Trade partners and customers had similar motivations for participating in Whole Home. Most participating customers were motivated by a desire to reduce their energy bills and improve the comfort of their homes. All participating trade partners were driven to participate to help customers improve the efficiency and comfort of their homes. However, there is an opportunity to improve the experience and overall satisfaction of the product for both trade partners and customers. Trade partners gave varying overall satisfaction ratings for Whole Home (1, 3, and 5), while the average customer's satisfaction rating is 3.7 on a scale of 1 to 5, where 1 meant very unsatisfied and 5 meant very satisfied. The following sections provide more details about motivations to participate in the product, satisfaction and feedback, barriers to completing multiple projects, application process, and implementer support to improve product experiences.

PRODUCT SATISFACTION

“Customers don’t recognize it... Nobody’s advertising it... not getting any word of mouth out there except me.”

4.4.1 Motivation for Participation in Whole Home Efficiency

Participating customers were motivated to install energy efficiency upgrades to reduce energy bills and improve comfort in their homes. Six out of eight participating customers described improving the comfort of their home as the key factor motivating their interest in energy efficiency upgrades.

“My house got very, very cold in the winter... So just trying to save heating bills.”

“The temperature of the second story of our home is not consistent with the main floor... We were looking to make the house more comfortable overall.”

These findings were underscored by participating trade partners, who were motivated to participate in the Whole Home product by a desire to help their customers improve the efficiency and comfort of their homes (n = 3). All three trade partners said that helping customers use less energy and improving their homes are the primary motivators for their participation in Whole Home.

“It’s the best thing that people can do for their homes - To make them tighter, to use less energy, give more comfort.”

Other motivating factors included helping customers get all the rebates possible (n = 2) and the incentive offered for trade partners (n = 1).

Trade partners who signed up for Whole Home but never participated did so because they did not want to miss sales opportunities. Two trade partners initially signed up to participate as product-eligible trade

partner because they did not want to miss out on a potential customer if they wanted to participate in the product. One of these trade partners did not recall signing up for Whole Home, but was not surprised that he signed up, because he said he signed up for all the rebate products for which he was eligible. Despite signing up, these trade partners do not actively promote the product or complete projects through the product.

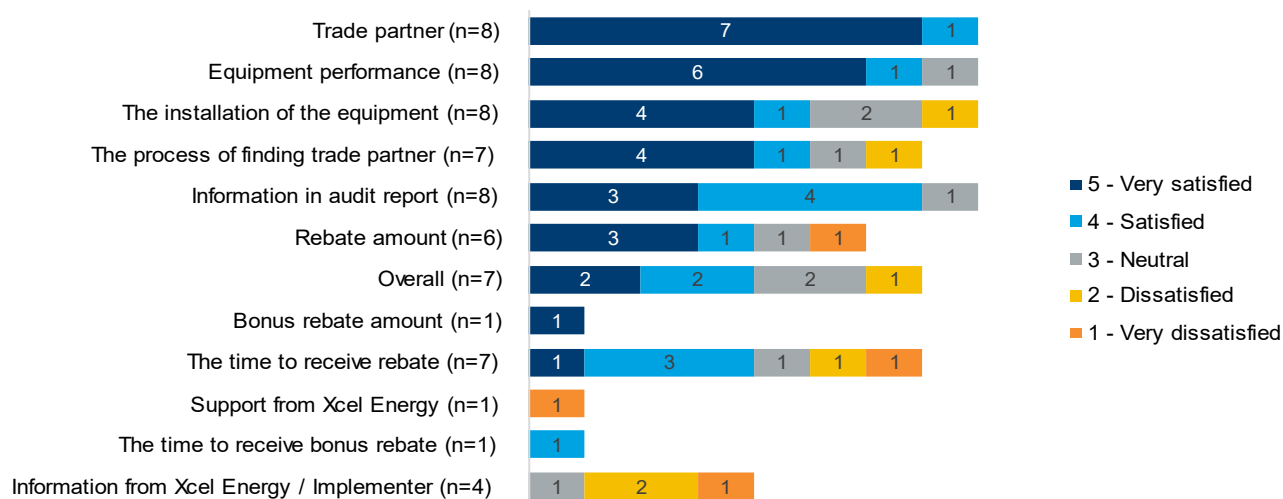
4.4.2 Customer & Trade Partner Satisfaction

To understand participating customers' and trade partners' experiences with the product, the evaluation team asked interview respondents about their satisfaction with the product overall, as well as with various aspects of the product.

Participating Customer Satisfaction

Participating customers provided a satisfaction rating for the product overall as 3.7 out of 5, where 1 meant “very dissatisfied” and 5 meant “very satisfied”. As shown in Figure 4-6, participating customers were most satisfied with factors related to trade partner's role, including satisfaction with the process of finding their trade partner, trade partner performance (e.g., knowledge and professionalism), installation of equipment (e.g., effectiveness and cleanliness), and equipment performance (e.g., improved comfort and decreased energy bill as recommended). These findings underscore the important role of the trade partner in customer experience with the Whole Home Efficiency Product, from educating customers on energy efficiency options to completing the upgrades that meet customer expectations.

Figure 4-6. Whole Home Efficiency Satisfaction, Participating Customers (n = 8)



Seven participating customer respondents were very satisfied with their trade partner, which could be explained by the close interaction, if not the only point of contact for the customers, throughout the entire process. All participating customer respondents received support from their trade partners to complete product application forms. These customers indicated they had no issues during the application process, as their contractors completed most of the administrative requirements.

On the contrary, information received from the implementer or from product staff received the lowest scores. As noted previously, the overall participating customer awareness of the product was low, and nearly all participating customers were unaware of the bonus rebate. Participating customers also rarely reported interacting with the implementer throughout their process of participating in Whole Home. One

participating customer who did interact with the implementer expressed confusion about the role of the implementer during the application process:

“[The implementer] either directed us to the website to enroll... reached out to the contractor and said, hey, did you submit the application? ...They didn’t seem particularly well-informed or well-positioned to help me through the rebate process.”

The satisfaction findings indicate that the limited interaction between the customers and product staff or implementer has a negative effect on customer satisfaction and that there is an opportunity to significantly increase satisfaction scores by improving support offered to the customer through the implementer and/or through product staff.

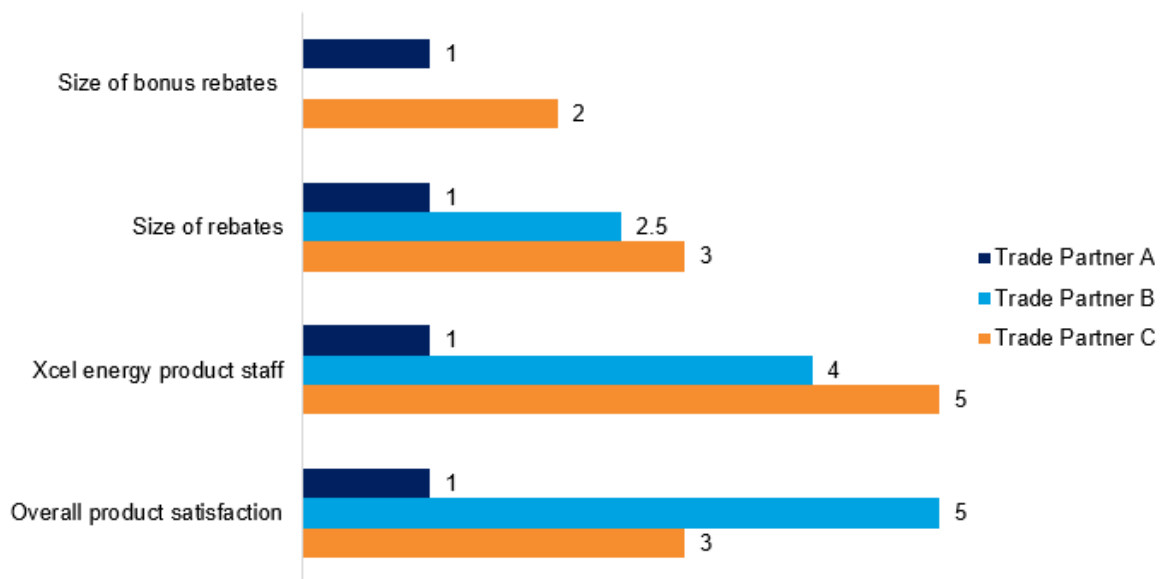
Participating Trade Partner Satisfaction

Participating trade partners have varying overall satisfaction ratings with the Whole Home Efficiency Product. The average overall product satisfaction for participating trade partners was 3 on a 1-to-5 scale, with scores provided across the scale. Two participating trade partners were satisfied with Xcel Energy product staff.

As shown in Figure 4-7 below, one participating trade partner provided the lowest rating on all satisfaction parameters. This trade partner stated:

“I’m not at all happy with the way it is right now... Customer don’t recognize it... Nobody’s advertising it... not getting any word of mouth out there except me.” – Participating Trade Partner

Figure 4-7. Whole Home Efficiency Satisfaction, Participating Trade Partners (n = 3)



4.4.3 Barriers to Completing Multiple Projects

Respondents felt that limited time and budget could be barriers to installing multiple energy efficiency upgrades through Whole Home and that the bonus rebate is only moderately useful in overcoming these barriers. Two participating trade partners felt that customers’ ability to complete multiple projects could be limited by the two-year window requirement and by budget constraints within that window. While

participating customer respondents did not report this as an issue, this finding aligns with feedback from six nonparticipating customers who felt that the two-year window could limit their ability to participate in the product. In addition to the time limit, trade partners perceived that the bonus rebates for completing multiple projects was not significant enough to motivate customers to participate in the product. Moreover, none of the participating customer respondents were aware of the bonus rebates, as they either received a one-time rebate or deduction from the trade partners' total cost without further explanation of the rebate structure from their contractor. Lack of promotion by trade partners and resulting lack of awareness of the bonus by customers limits its ability to influence customers to decide to complete multiple projects and limits its role in helping customers overcome their concerns about completing projects in a two-year span. On the other hand, even if trade partners did promote the bonus rebate more frequently, there is some evidence that it is too low and still would not act as a strong motivator to customers at its current level.

4.4.4 Application Process

There is a perception among trade partners that the rebate application for Whole Home is more difficult than that of the stand-alone products, particularly among previously participating trade partners. Two participating trade partners mentioned that the rebate forms were confusing or cumbersome. But for one, the challenge was tied to insulation project eligibility requirements (not specific to Whole Home). The evaluation team found a similar perspective among some trade partners who no longer participated in Whole Home. Three previously participating trade partners felt that there was something difficult about the rebate process – either that the rebate forms for Whole Home were more complicated to complete than the forms for stand-alone products, or that the rebates were not significant enough to make the extra paperwork worth their time.

“The rebate paperwork on the Whole Home Efficiency has been significantly more onerous... the rebate form is two pages, not well laid out... not everything was thought through... can be a little confusing.” – Participating Trade Partner

“So, unless these programs bring rebates that are significant to the table, it's not really adding value. I'm not benefitting by joining the program...it's just a bunch of more paperwork for me” – Previously Participating Trade Partner

As noted previously, no participating customers reported having issues during the application process, stating that their trade partners completed most of the administrative requirements for them. However, one customer contacted the implementer about questions they had on the application and felt that the implementer was not well-informed about the rebate process. These findings highlight an opportunity to ensure that the application process is as straightforward as possible for the trade partner, so they are more likely to use the product and promote it to their customers. Additionally, there is opportunity for implementers to improve their knowledge and understand of the product so they can effectively support customers who come to them with questions.

4.4.5 Implementer Support

The Whole Home Efficiency Product contracts with an implementer, whose role is intended to provide high-touch support to both trade partners and customers as they proceed through the product. According to the current implementer contract, the implementer should support trade partners by providing training and product support, and customers by acting as an Energy Advisor who supports them in tasks like selecting upgrades and finding appropriate contractors. Through interviews with trade partners, participating customers, and product staff, the evaluation team found that participating customers and trade partners currently do not typically interact with the implementer. Only one participating customer

recalled interacting with an implementer representative throughout the process of participating in Whole Home. Other participating customers only interacted with their external auditor and trade partner. The participating customer who was interested in installing multiple measures and contacted the energy advisor faced challenges getting the information they needed. The implementer's energy advisor with whom they spoke did not seem knowledgeable about the product and was not able to provide the information the participant needed quickly.

The evaluation team found that there is an opportunity to leverage the implementer to better support the customers. When a customer wants to install multiple measures to participate in Whole Home, it is particularly important that they receive continuous support through the phases of the product to connect between trade partners of different specialties. This is supported by the feedback from trade partner respondents, who expected the product staff and implementer to be the driver of cross-specialty collaboration and to make customers aware of the resources available. As discussed in Section 4.2, the audit process is an important step in increasing product awareness. The current Whole Home Efficiency implementer also administers Xcel Energy's Energy Squad audit product – this is an important opportunity for the implementer to actively follow-up with and educate customers about the Whole Home offering if they completed a home energy audit. Moreover, the implementer is supposed to conduct two trainings or webinars with trade partners each year through the implementation contract. These are important opportunities for the implementers to underscore benefits of the product, clarify product misconceptions, and provide clear updates on product changes.

5 Conclusions & Recommendations

This section presents TRC's key findings and associated recommendations regarding the Xcel Energy Whole Home Efficiency Product in Colorado. All recommendations are based on key findings from the TRC evaluation research and are designed to reflect the context of future product years, acknowledging expected changes in the market and planned product changes.

Overall, the evaluation team found that limited outreach and education effort to promote Whole Home Efficiency led to (1) lack of customer awareness of the critical product offerings, such as the rebate structure, and (2) lack of trade partner satisfaction, particularly with product design changes. Despite providing overall satisfaction for participating customers, Whole Home product staff have an opportunity to improve the product to better serve future customers and trade partners and to grow natural gas savings by meeting comprehensive weatherization and electrification goals. We identified several recommendations to further improve satisfaction and increase product influence. The remainder of this section presents key findings and recommendations.

- **Key Finding 1:** Trade partners generally like a more streamlined process for participating in rebate products and customers often do not understand that Xcel Energy has different products for rebates. Additionally, Xcel Energy is capturing some upgrades through stand-alone products that would be eligible for Whole Home. There is opportunity to streamline the multiple products and avoid competing for savings by combining residential rebates.
 - **Recommendation 1:** Assess the feasibility of converting Whole Home Efficiency into a non-resource product that supports the stand-alone residential rebate products to streamline participation for trade partners and customers.
 - If implemented, Xcel Energy should reassess whether customers would still be required to get an audit to qualify for bonus rebates. Emergency replacements could be counted as a separate opportunity (without requiring an audit or requiring a post-installation audit within a reasonable time frame).
 - Xcel Energy should apply separate NTGRs for each stand-alone measure in a project, rather than applying the Whole Home Efficiency NTGR to the entire portfolio.
 - This update would represent a large structural change to the Whole Home Efficiency product and would require considerable administrative resources to implement but is likely to improve customer and trade partner satisfaction with the rebate process and drive additional participation.
- **Key Finding 2:** Trade partners rarely work with contractors from other specialties and are reluctant to make referrals. Insulation contractors described this as a reason that they only tell customers about the product if they can complete all three projects themselves.
 - **Recommendation 2:** Engage the implementer to better facilitate connections between trade partners of different specialties so they can support customers.
 - Because contractors are hesitant to make referrals to contractors whose work they cannot vouch for, no contractor is encouraging customers to install multiple measure types.
 - Until another market actor develops this business model, the implementer is best positioned to help customers find different types of trade partners to complete audit recommendations.

5 Conclusions & Recommendations

- This is already set as an expectation for the implementer through the implementation contract with Xcel Energy, but the evaluation team did not find evidence that this “concierge-style” service was happening frequently with customers.
- As an alternative, Xcel Energy could consider developing a general contractor role who would help facilitate communication between various types of trade partners.
- **Key Finding 3:** Trade partners expressed some misunderstandings about product eligibility and frustrations with the process of applying for Whole Home.
 - **Recommendation 3:** Leverage the implementer to facilitate trade partner trainings, to underscore benefits of the product, clarify product misconceptions, and provide clear updates on product changes.
 - Use these opportunities to resolve misconceptions that trade partners do not need to connect their customers to other contractors or install three projects themselves.
 - Highlight the trade partner incentive and show benefits that could be realized by taking advantage of the incentive.
 - Clarify recent product updates with trade partners, such as the product name change, removal of the insulation requirement, and removal of lighting rebates.
 - The implementer is supposed to conduct two trainings or webinars with trade partners each year through the implementation contract. These opportunities should be leveraged to provide the information recommended above.
 - If it remains a barrier even after increasing trade partner education, Xcel Energy could consider redesigning the rebate application to ease the process of applying for the rebate.
 - **Key Finding 4:** Customers are currently unaware of the bonus rebate and trade partners do not feel the additional 10% is sufficient motivation—and often do not mention it to customers.
 - **Recommendation 4a:** Increase the bonus rebate to drive participation and increase the bundling of upgrades.
 - Increasing the bonus rebate could bring additional customers to the product who were not influenced by the rebates offered for stand-alone products and
 - Increasing the bonus rebate could also help overcome the cost barriers associated with completing multiple projects within a limited two-year window.
 - **Recommendation 4b:** Highlight the bonus rebate in proactive after-audit follow-up with customers.
 - The bonus rebate sets Whole Home Efficiency apart from stand-alone products and highlighting it could help drive participation by customers who are considering installing multiple energy efficiency measures in their homes.
 - This could be done as part of tracking the after-audit follow-up with customers on the audit recommendations. Product staff or the implementer should develop additional outreach that is triggered once customers complete each audit recommendation and include a reminder about the availability of the bonus rebate.

5 Conclusions & Recommendations

- **Key Finding 5:** Participating customers were unfamiliar with product processes and there is opportunity to drive participation in different measure categories by requiring the implementer to increase outreach to the customer and contractors.
 - **Recommendation 5a:** Use multiple outreach channels to highlight the resources available to customers through the implementer, including the Energy Advisor, who can help them select projects and connect with trade partners.
 - Current product design is not influencing customers to install measures other than insulation. Reminding customers of the resources available through Xcel Energy product staff and the implementer's Energy Advisors could help drive participation in other measure categories like HVAC.
 - **Recommendation 5b:** Increase promotion budget to allow for multi-channel outreach and improve ability to engage customers through high-touch outreach.
- **Key Finding 6:** Audit participants are motivated and planning to install energy-efficient home upgrades and have completed the requirement for participation in Whole Home Efficiency.
 - **Recommendation 6:** Leverage audit participants as hot leads by asking auditors and implementation staff to specifically mention Whole Home Efficiency and send targeted after-audit outreach to customers promoting Whole Home Efficiency.
 - Targeted outreach to Home Energy Audit/Home Energy Squad participants is a straightforward way to generate hot leads for Whole Home.
 - Work with implementers to develop a plan and goals for product outreach after audits. Ensure that expectations for outreach and “concierge” service are clear to implementer and part of their performance metrics.
 - These leads could also be used to begin promoting or developing a targeted electrification path with the intent to support customer transition into smart electric homes. The audit participants represent a highly engaged subset of customers who are motivated to improve their homes' efficiency and could be interested in being early adopters of electrification.
- **Key Finding 7:** Customers are currently only pursuing insulation measures through the product, and no HVAC contractors are currently participating. HVAC contractors see the audit as a barrier and are hesitant to promote Whole Home Efficiency as a result.
 - **Recommendation 7:** Ask the implementer to repeat contacts to audit participants and partial participants to encourage them to install different measure types (like HVAC) and connect them to the appropriate resources.
 - HVAC contractors described being more likely to participate in Whole Home Efficiency if customers making upgrades, who had already completed an audit, were proactively connected to them by the implementer or if they were contacted directly by the customer themselves.
- **Key Finding 8:** Peer utilities described word-of-mouth communication as the most effective strategy to market their products. Several participating and nonparticipating customers learned of Whole Home Efficiency or the audits through neighbors or friends.

5 Conclusions & Recommendations

- **Recommendation 8:** Develop leave-behind marketing for the product to be distributed during audits and Home Energy Squad visits. Provide a one-page leave-behind document or magnet to implementer staff, specific to Whole Home Efficiency.
 - This can serve as a reminder to the customer to complete projects and as an opportunity to spread word-of-mouth information because it can be shared easily with friends or family.
 - Physical reminders are particularly important to programs like Whole Home Efficiency because they can encourage customers to mention Whole Home Efficiency to others and drive interest in the product.

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Appendix A: Evaluation Plan

A.1 Evaluation Plan

Introduction

To support the 2022 process and impact evaluation of Xcel Energy efficiency products, the TRC evaluation team conducted a process and impact evaluation of the Xcel Energy Colorado Whole Home Efficiency product. This memo provides a plan for the 2022 Whole Home Efficiency evaluation based on staff feedback during the evaluation kick-off meeting, staff interview findings, and review of product documentation. This evaluation plan includes the following sections:

- ◆ Product Overview
- ◆ Evaluation Overview
- ◆ Data Collection Activities and Sampling Plans
- ◆ Net-to-Gross Approach

Product Overview

The Whole Home Efficiency product (referred to as Whole Home) supports Xcel Energy residential customers in identifying ways to save on energy costs while maintaining or improving the comfort of their homes. The product provides incentives for energy-efficient home upgrades completed by trade partners who are registered participants in the Whole Home product.

To be eligible for Whole Home product, the customer must first complete an audit through a Home Energy Squad Plus visit (Home Energy Squad audits are also conducted by the program administrator) or find a qualified, participating trade partner to complete a Home Energy Audit with Blower Door and/or with Infrared.

There are two avenues by which customers may initially engage with the product after completing an audit: (1) By submitting an online application through the product website or (2) calling the Whole Home Efficiency staff from Xcel Energy to sign up. Customers who completed their audit through a Home Energy Squad Plus visit are contacted by the program administrator to review their audit results, identify qualifying projects and to connect with product-eligible trade partners to complete their projects. The program administrator receives a notification when the improvements are completed, at which point they may reach out to the homeowner for a quality control visit. Xcel Energy is currently developing a third option for customers to engage with the product by scheduling an audit through the online marketplace provider.

Customers receive standard rebates (that align with rebate amounts for stand-alone products) for each of their projects, and once they complete three, receive a bonus rebate of 10% of the total rebated amount. All three of the improvement projects must be completed within two years of the customer having completed their audit. In addition to incentives to customers for completing projects, a separate incentive is also provided to trade partners who complete projects through the Whole Home product. All trade partners who participate in the Whole Home product must be registered with the product.

Staff reported that the Whole Home product is currently a reactive product with minimal marketing to proactively promote the product to customers. In the past, the program administrator conducted email marketing for the product with customers who had completed an audit through Home Energy Squad. The program administrator indicated that there is currently no marketing budget for the product and the product has gone through some recent changes affecting marketing collateral (described below), so this type of marketing has not occurred in the past year. Moreover, the product staff noted that the Covid-19 pandemic has impacted the supply chain of overseas products (particularly for heat pumps) and may have discouraged homeowners from allowing walk-in audits on their property.

Xcel Energy has made several changes to the Whole Home product in the past two years and is planning several additional changes in 2022:

- ◆ Until 2019, Xcel Energy required customers to complete an insulation improvement to be eligible for participation in Whole Home Efficiency. This requirement was removed to give the homeowner more flexibility in their choice for eligible upgrades. The change coincided with a drop-off in the number of participating insulation contractors, but it is currently unclear whether the two occurrences are related. Some product staff speculate that the change could have impacted the insulation trade partner's motivation to participate in the product due to perceived decreased prioritization of insulation improvements.
- ◆ In the past two years, the product has added several new measures to the product, including boilers, indirect water heaters, clothes washers and dryers, and cold climate heat pumps.
- ◆ In 2022, the name of the product changed from Home Performance with ENERGY STAR to Whole Home Efficiency. It is no longer affiliated with Home Performance with ENERGY STAR and no longer follows those program requirements, but Whole Home-eligible equipment must still meet ENERGY STAR certification.
- ◆ The Whole Home product is considering implementing a pay-for-performance model for insulation measures based on baseline R values. Incentives for insulation would be determined based on the customers' pre- and post-improvement R values, rather than a prescriptive incentive based on the cost of materials and labor. If implemented, this would be the only measure that did not align with standard incentives in other stand-alone products.

As shown in Table 1, the Whole Home Efficiency product provided electric and gas savings for four measures that were completed and claimed in 2021. The electric savings for each measure ranged from 233 kWh to 757 kWh and gas savings from 389 Therms to 1,050 Therms. The measure group that claimed the most electric and gas savings was the wall insulation, which accounts for over 33% of the total savings in 2021. The 2021 product provided bonus rebates to five customers for completing three qualifying measures and also provided trade incentives to three trade partners for installing product-eligible measures. While there are several other measures that are eligible for the Whole Home Efficiency program (and several that were added to the program in 2021), no participating customers installed any of these in 2021; therefore, there are no claimed savings for any other measures.

Table 1. CO Whole Home Efficiency Product Savings, January 2021 – December 2021

Measure	kWh		kW		Therms	
	Quantity	% of Total	Quantity	% of Total	Quantity	% of Total
Air Sealing & Weather-stripping T2	233	10.3%	0.426	10.3%	389	12.3%
Air Sealing & Weather-stripping T3	554	24.5%	1.011	24.5%	902	28.4%
Attic Insulation	714	31.6%	1.299	31.6%	834	26.3%
Wall Insulation	757	33.5%	1.381	33.5%	1,050	33.1%
Total	2,258		4.117		3,175	

Note: This is the population of participating customers receiving rebates between January 2021 and December 2021. These numbers are based on aggregated data provided to TRC in March 2022.

Evaluation Overview

The 2022 evaluation consisted of a process evaluation and an impact evaluation. The process evaluation focused on customer and market actor experiences with the product, while the impact evaluation focused on estimating a net-to-gross ratio (NTGR). This section presents the objectives of these two components of the evaluation. We provide a more detailed description of the evaluation activities in the next section.

Process Evaluation

The evaluation team discussed process evaluation priorities during the kickoff meeting and staff interviews. During those conversations, the following process-related themes emerged:

- ◆ Product participation is currently low, and the product was unable to meet its savings and participation goals in 2021. Product staff feel a main barrier to participation is related to low awareness of the product among potential customers, which limits the product's ability to enroll new customers.
- ◆ The audit pre-requisite can be a barrier to participation, particularly when the customer is installing program-eligible equipment due to burnout or failure of old equipment.
- ◆ Xcel Energy anticipates changes to the product that offer more flexibility and options for customers will increase product participation.
- ◆ Ensuring trade partners are well-informed of the latest updates on the Whole Home Efficiency product through education and marketing support could increase awareness among customers and help motivate them to participate.
- ◆ Xcel Energy is interested in understanding whether there is an opportunity to streamline the participation process by incentivizing collaborative efforts among trade partners, particularly for customers who did not receive an audit through the program administrator (Home Energy Squad).
- ◆ The audit pre-requisite can be a barrier to participation, particularly when the customer is installing program-eligible equipment due to burnout or failure of old equipment.

- ◆ Product staff are interested in better understanding whether the bonus rebates and other benefits offered through the product are significant enough to overcome the product's barriers, stemming from recent product changes, the Covid-19 pandemic, and product pre-requisites.
- ◆ There may be an opportunity to streamline the participation process by incentivizing collaborative efforts among trade partners. While this is a role of the program administrator, those customers who did not receive an audit through the program administrator (via the Home Energy Squad product) do not have the same support in identifying qualified trade partners. (More customers

These topics are mapped to the following **objectives of the process evaluation**:

- ◆ Understand how best to engage customers and further motivate customers to participate.
 - ◇ Research whether audit providers feel there are opportunities to discuss the product with homeowners both before and after the audit process.
 - ◇ Determine what marketing channels would help customers better engage with the product and motivate them to participate in the Whole Home product.
 - ◇ Understand what level of outreach is needed to proactively promote the product and how best to leverage the implementation team to promote the product.
 - ◇ Explore peer utilities' experiences with optimizing customer engagement.
 - ◇ Determine successful marketing strategies used by peer utilities to improve customer awareness and participation.
- ◆ Identify the sources of the product's challenges with trade partner engagement.
 - ◇ Understand why participation by insulation contractors has decreased in the past years and why it is difficult to recruit HVAC contractors. Probe into how external factors (housing market, new construction) have affected participation.
 - ◇ Explore ways to further engage non-participating trade partners.
 - ◇ Understand trade partner perspectives on how to better facilitate collaboration between trade partners of different specialties.
 - ◇ Determine successful strategies used by peer utilities to improve trade partner engagement.
- ◆ Explore participating customer and trade partner product experiences.
 - ◇ Understand how customers become aware of Whole Home Efficiency and whether there are opportunities to increase promotion of the product through Home Energy Squad visits.
 - ◇ Explore participating customers and trade partner experiences and satisfaction with the Whole Home Efficiency product.
 - ◇ Determine what (if any) barriers trade partners face in completing the rebate application for the product.
 - ◇ Determine what prevents a customer from completing three Whole Home-eligible projects, including whether customers consider the audit requirement a barrier.

Research whether peer programs offer a non-audit track for participation, and if so, whether they find that customers are interested in that track.

- ◇ Determine whether the product benefits and current rebate structure are sufficient to overcome previously identified barriers, including the removal of the insulation project requirement, the Covid-19 pandemic, and product pre-requisites.
- ◇ Explore ways to simplify and clarify the product, while ensuring that customers receive continuous support throughout different phases of the product.
- ◇ Understand where there are gaps or overlaps in roles and responsibilities between auditors, program administrator's energy advisors and trade partners. Explore strategies for better educating auditors, the program administrator, and trade partners about the Whole Home product and their roles.

Impact Evaluation

The objective of the impact evaluation of the Whole Home Efficiency Product was to develop a net-to-gross ratio (NTGR) documenting the extent to which product activities influenced customer purchasing decisions. The evaluation team used customer and trade partner interviews to estimate the Whole Home Efficiency Product's NTGR (both retrospective and prospective). Accordingly, the objectives of the impact evaluation include:

- ◆ Determine NTGR for qualifying measures rebates.
- ◆ Identify major drivers of free-ridership.
- ◆ Assess participating customer spillover.
- ◆ Assess market effects of the Whole Home Efficiency Product.

The full NTGR approach is detailed in a later section of this document.

Data Collection Activities & Sampling Plans

To meet the above objectives, the evaluation team conducted a variety of data collection activities. These are listed in Table 2 and explored more in this section. The evaluation team had already conducted interviews with Xcel Energy staff members (Table 2, Task Reference 1) to help understand the specific needs for this evaluation.

For customer research, the evaluation team conducted phone interviews with participating customers (Table 2, Task Reference 3a). These interviews informed prospective and retrospective NTGR estimates and also included customer-related process questions. The evaluation team conducted interviews with near-participating customers. Near-participating customers were defined as customers who have completed an audit and signed up for the product but did not complete improvements or who completed a Home Energy Squad visit and did not sign up for the product or complete improvements. (Table 2, Task Reference 3b).

For trade partner research, the evaluation team conducted phone interviews with participating and non-participating trade partners (Table 2, Task Reference 4a, 4b) to understand their experiences with the installing measures through the Whole Home product and barriers to participation. Non-participating trade partners included both trade partners who participated previously and no longer participate, as well as trade partners who participated in relevant stand-alone product but not in Whole Home Efficiency.

Finally, peer utility benchmarking interviews (Table 2, Task Reference 5) helped Xcel Energy understand how other organizations are supporting the installation of Whole Home measures in their residential markets.

Table 2. Whole Home Efficiency Research Summary

Task Ref.	Research	Included in Original Scope	Estimated Population Size ^{ab}	Research Objectives
1	Staff Interviews	✓	6	Inform Evaluation Plan
2	Product Design Assessment	No	N/A	Product experiences
3a	Participating Customer Interviews	Adjusted	19	Product experiences, customer engagement, NTGR
3b	Near-participating Customer Interviews	✓	58	Customer engagement, NTGR
4a	Participating Trade Partner Interviews	✓	4	Product experiences, trade partner engagement, NTGR
4b	Non-participating Trade Partner Interviews	No	145 ^{cd}	Trade partner engagement, NTGR
5	Peer Utility Benchmarking Interviews	✓	4-6	Best practices: Customer engagement, trade partner engagement, market growth, product experiences

- a. Table includes population sizes estimated during evaluation planning. The actual population and sample sizes are included in the sections below.
- b. The evaluation team recruited from a census of the population for each research activity. We initially anticipated a response rate of about 10%.
- c. The evaluation team recruited as many interviews with non-participating trade partners as possible. Population number includes about 25 trade partners who have dropped out of the program and 120 true non-participating trade partners.
- d. HVAC contractors were interviewed as part of an evaluation in 2021, so there may be limited sample to draw from.

1. Staff Interviews

In March and April 2022, the evaluation team conducted six interviews with Xcel Energy and program administrator staff to inform this evaluation plan, discuss product goals, and review product processes, challenges, and successes. Those interviewed from Xcel Energy included the current and former product managers, team lead, trade relations manager, and product engineer. The evaluation team also conducted two interviews with the program administrator’s quality assurance manager/ field operations and the associate program manager. These interviews were conducted over the telephone and took between 45 minutes and one hour to complete. These meetings, combined with the kickoff meeting, allowed the evaluation team to create a focused evaluation plan with defined data collection activities.

2. Product Design Assessment

The evaluation team reviewed documentation of the program administrator’s roles and responsibilities in the context of the Whole Home Efficiency product. The evaluation team then

compared the program design, specifically regarding roles and responsibilities, outlined in the documentation to responses from staff interviews and participating customers, to understand if the product is being implemented as designed. Examples of documentation reviewed included filing documents, the product's scope of work, and the product website and marketing collateral.

Results of this assessment can inform research and evaluation work in 2023, including planned evaluations for Home Energy Audits and Home Energy Squad.

3a. Participating Customer Interviews

Participating customers were defined as Xcel Energy customers who completed for a Whole Home-eligible project in 2020 and 2021^{1,2}. The evaluation team used participating customer phone interviews to meet both process and impact evaluation objectives. These interviews focused on the following topics:

- ◆ **Product Experiences & Satisfaction:** The evaluation team assessed customers' experience throughout the product, including what is working well, what they find are the most important or valuable aspects of the product, and to identify aspects of the products that could be improved.
 - ◇ The evaluation team assessed how participating customers became aware of the qualifying measures to better understand how these customers learn about the rebates. We also asked participating customers about their motivations to apply for rebates to better understand why they want to participate and if any particular product elements drive participation. The evaluation team discussed participating customers' experiences and satisfaction with various aspects of the rebate process.
 - ◇ The evaluation team assessed how customers became aware of the Whole Home product to better understand how participating customers learn about the product. It also identified product strengths and opportunities for the product to better engage potential customers.
 - ◇ The evaluation team assessed customer satisfaction with various aspects of the Whole Home product. We also asked customers if there were other resources or tools customers want or need to make it easier for them to participate and/or to improve their satisfaction.
 - ◇ In order to inform the program design assessment, the evaluation team asked what support elements participants recalled receiving while participating in the program.
- ◆ **Customer Engagement:** The evaluation team assessed the customer experience to understand how to better market the program to customers and improve engagement.
 - ◇ We identified additional support structures that might improve the experience of participating customers, or they would like to see included in the product.
- ◆ **Retrospective NTG Impacts:** The evaluation team asked participating customers questions about product attribution (i.e., the impact the product had on their decision to purchase energy efficiency measures through Xcel Energy). We also asked participating customers about any additional energy-efficient equipment installed due to their

¹ Including only participants from 2020 who began participating before product design changes were implemented in 2019.

² There are currently no projects/participants in the pipeline for 2022.

experience with the Whole Home Efficiency product but for which they did not receive an Xcel Energy rebate.

Due to the small population, we attempted to interview all participating customers from 2020 (prior to program design changes) and 2021, as shown in Table 3. The evaluation team looked at results based on the number of measures the customer has installed – Those who have installed three or more measures and qualify for the bonus rebate (full participants), and those who have installed fewer than three measures (partial participants).

Table 3. Sample for Participating Customer Interviews (April 2020 - June 2022)

Population Size	Sample Size
19	8

3b. Near-participating Customer Interviews

The evaluation team conducted in-depth interviews with near-participating customers, as shown in Table 4. For the purpose of this research, near-participating customers were defined as customers who participated in an audit in the past three years but did not install any eligible measures. The evaluation team attempted to interview both those customers who signed up for Whole Home Efficiency after their audit and those who did not³.

- ◆ **Customer Engagement:** The evaluation team explored why customers chose not to participate in the Whole Home Efficiency product and understand what perceptions and barriers lead to not engaging with the product.
 - ◇ The evaluation team explored customers’ level of awareness and interest in the product and in energy efficient equipment generally. This will help to understand the demand for varying types of residential energy efficient equipment in an evolving market.
 - ◇ The evaluation team determined whether there were differences in the experiences of near-participating customers who signed up for the Whole Home product after receiving their audit and those who did not, that may have impacted their decision to enroll or not.
- ◆ **Retrospective NTGR Impacts:** The team asked nonparticipating customers if they installed energy-efficiency measures due to any influence from Xcel Energy but did not apply for a rebate. This information supported any spillover results among nonparticipating customers.

Table 4. Sample for Non-Participating Customer Interviews^a

Audit Type	Population Size	Sample Size
Home Energy Squad Plus	29	4
Home Energy Audit	56	7
Total	85	11

³ Ultimately, only one respondent in our population signed up for Whole Home Efficiency but did not install any measures through the product. The evaluation team was unable to get in touch with this customer.

^a The evaluation team received 6,148 total contacts representing customers who participated in a Home Energy Squad Plus visit or a Home Energy Audit with Blower Door assessment. The evaluation team prioritized recruiting these contacts by recency of participation and audit type, ensuring we spoke with both those who went through the Home Energy Squad audit and Home Energy Audit. The evaluation team recruited for interviews until we reached our target of 10 interviews.

4a. Participating Trade Partner Interviews

The evaluation team utilized trade partner interviews to meet both process and impact evaluation objectives. These interviews were integral for exploring the following topics:

- ◆ **Product Experiences:** The evaluation team assessed how trade partners became aware of Whole Home product to better understand how participating trade partners learn about the product rebates. We also asked trade partners about their motivations to become product trade partners and apply for rebates. This helped us better understand why they want to participate and if any particular product elements drive participation. The evaluation team discussed participating trade partners’ experiences and satisfaction with various aspects of the rebate process.
- ◆ **Retrospective and Prospective NTG Impacts:** The evaluation team asked questions on the influence or impact the product had on their decision to install and/or recommend energy efficiency measures. We also asked if the trade partner had changed their business strategy or model as a result of product’s offerings.

Due to small sample, the evaluation team attempted to interview all trade partners, as shown in Table 5.

Table 5. Sample for Participating Trade Partners

Trade Partner Type	Population Size	Sample Size
Participating Trade Partners	3	3

*Note: All the participating trade partners in 2021 were insulation contractors

4b. Non-Participating Trade Partner Interviews

For the purpose of this research, the evaluation team defined three categories of non-participating trade partners: (1) trade partners who signed up to participate in the Whole Home Efficiency product but never did so, (2) those who participated in the Whole Home product in the past but dropped out of the product in 2021 or (3) HVAC trade partners who participate in the standalone product but not in Whole Home Efficiency. The population and sample sizes for each of these groups are shown in Table 6. The evaluation team conducted interviews with non-participating trade partners to seek input on ways to engage with non-participating trade partners.

The evaluation team utilized trade partner interviews to meet both process and impact evaluation objectives. These interviews were integral for exploring the following topics.

- ◆ **Trade Partner Engagement:** The evaluation team explored why trade partners chose not to participate in the Whole Home product and understood what perceptions and barriers lead to not engaging with the product. Specifically, the evaluation team asked insulation contractors what (if any) product-related or market-related challenges caused them to leave the program, probing for the impact of recent program design changes. The evaluation team also asked what additional barriers HVAC contractors faced that

prevented them from participating in the product. The evaluation team also asked questions to help understand barriers that prevented trade partners of varying specialties from collaborating on projects within the Whole Home product, and whether there are opportunities to encourage collaboration.

- ◆ Retrospective and Prospective NTG Impacts: The evaluation team asked questions on product attribution, or the impact the product had on their decision to install and/or recommend energy efficiency measures.

Table 6. Sample for Non-Participating Trade Partners

Trade Partner Type	Population Size	Sample Size
Non-Participating HVAC	19	4
Previously Participating	10	4
Never Participating	20	3

5. Peer Utility Benchmarking Interviews

The objective of the peer utility benchmarking task was to understand how peer utilities approach key issues related to implementing energy efficiency measures in residential homes. The evaluation team collaborated with the product manager to identify four to six peer utilities to interview, as shown in Table 7. We considered the following criteria when selecting peer utilities: similar program designs, programs known to have best practices or tools Xcel Energy is interested in pursuing, utilities that operate in similar territories (including geography, number of customers, and/or number of small businesses in its territory).

The evaluation team worked to recruit staff in key management roles related to Whole Home product at peer utilities with a target sample size of four to six interviews. These interviews generally focused on the same discussion topics being explored in the interviews with Xcel Energy customers and trade partners, but emphasized the following research objectives specific to peer benchmarking interviews:

- ◆ Customer engagement: There was interest among product staff and the evaluation team in understanding how other utilities manage customer engagement, including monitoring complaints, and tracking and motivating customer engagement at different phases of the process.
- ◆ Trade partner engagement: The evaluation team and product staff wanted to investigate how other utilities assist existing trade partners in becoming product-qualified trade partners and how to actively engage throughout the process. Additionally, the evaluation team asked peers about their program eligibility criteria, and whether they had multiple paths of participation through their programs – with and without an audit.

The evaluation team worked with the product manager to identify a list of peer utilities to include in the peer utility sample. The evaluation team reviewed these utilities and identified additional peer utilities for consideration prior to conducting the interviews. Criteria for peers described by product staff included location in the southwest United States, programs with different eligibility criteria, programs that are part of Home Performance in the southwest, and IOUs offering gas programs.

Table 7. Sample for Peer Utilities

Target Number of Peers	Sample Size
4-6	5

Net-to-Gross Approach

The net-to-gross assessment aims to estimate the percent of savings achieved that can be attributed to product actions, or a net-to-gross ratio (NTGR). The NTGR includes multiple metrics, which are described in the sections below. To estimate the ratio, the evaluation team primarily used: (1) participating and near-participating customer interviews; (2) participating and non-participating trade partner interviews, to assess product attribution, including free-ridership, spillover, and market effects metrics. The evaluation team based its methodology on the most recent Illinois Technical Reference Manual (TRM),⁴ as this type of approach is used extensively in other jurisdictions, both by our team and outside industry experts, and it has been the basis for our evaluations conducted for Xcel Energy since 2017.⁵

The evaluation team estimated retrospective and prospective NTGRs. Using multiple sources of information, including surveys and interviews with customers and interviews with trade partners, we synthesized available data to develop the final NTGRs to ensure that we provided the most accurate and reliable estimate of net savings. The remainder of this section presents our methodology for estimating the retrospective and prospective NTGRs.

Retrospective Net-to-Gross Ratio

The evaluation team estimated retrospective NTGR by examining free-ridership, spillover, and market effects. The evaluation team relied primarily on data collected from customers, along with additional qualitative input from trade partners. The evaluation team then synthesized these results to estimate a NTGR for the product. This section describes how the evaluation team estimated these components of the retrospective NTGRs.

Free-Ridership

Free-ridership is a measure of the amount of a product’s claimed savings that would have occurred in the absence of the product. Free-ridership is assessed on a scale from 0 to 1, where 1 indicates that the product had 100% free-ridership and all product savings would have occurred without any of the product’s rebates or assistance.

To determine free-ridership, the evaluation team applied a similar procedure described in the Illinois TRM for energy efficiency programs most similar to the Whole Home Efficiency product. This procedure was based on the 2021 Illinois NTG Protocols and incorporated changes that Illinois stakeholders were discussing for 2022.

⁴ Illinois Energy Efficiency Stakeholder Advisory Group. Illinois Statewide Technical Reference Manual, Version 10.0, Volume 4, Attachment A: IL-NET-TO-GROSS Methodologies, Volume 4. September 24, 2021.

⁵ The Xcel Energy evaluation team does not include the “Product Influence” score, which is one of three scores used to calculate free-ridership defined by the IL TRM. This decision was made in 2018 based on feedback from cognitive interviews with participating customers, which found that customers did not respond to this question as expected in the IL TRM.

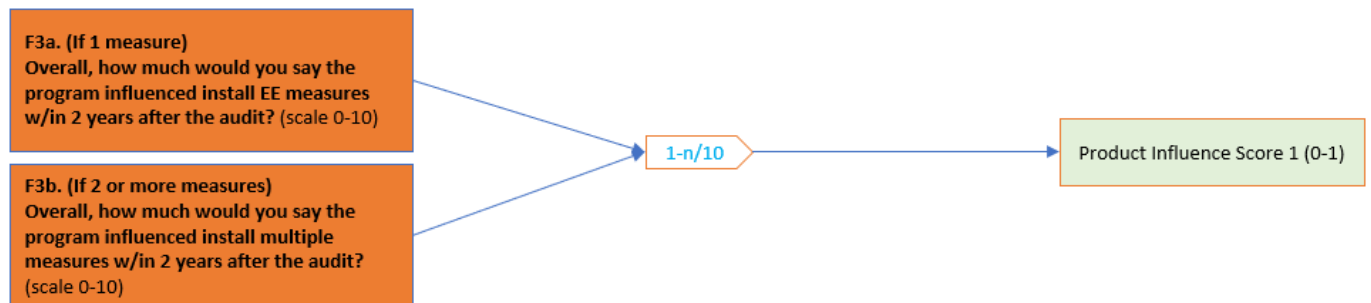
Product Influence Score

The Product Influence Score is a measure of how influential the product was in a participant's decision-making process. To measure Product Influence, we used questions F3a/F3b in Figure 1 below to score the product's influence for each participating customers on a scale of 0-10. To increase confidence in these scores, participating customer scores were also informed by trade partners' perceptions of the product's influence on their customer decisions.

To produce matching scales with the Non-Product Score, the evaluation team took the Product Influence Score, reversed the scale (making a "10" now a "0"), and divided by 10, so scores would fall between "0" and "1." A Product Influence Score closer to 0 indicates a high level of product influence.

Since the Product Influence Score does not take into account what would have happened in the absence of the product, it typically underestimates free-ridership and is balanced by the No-Product Score, described below.

Figure 1. Product Influence Score Approach

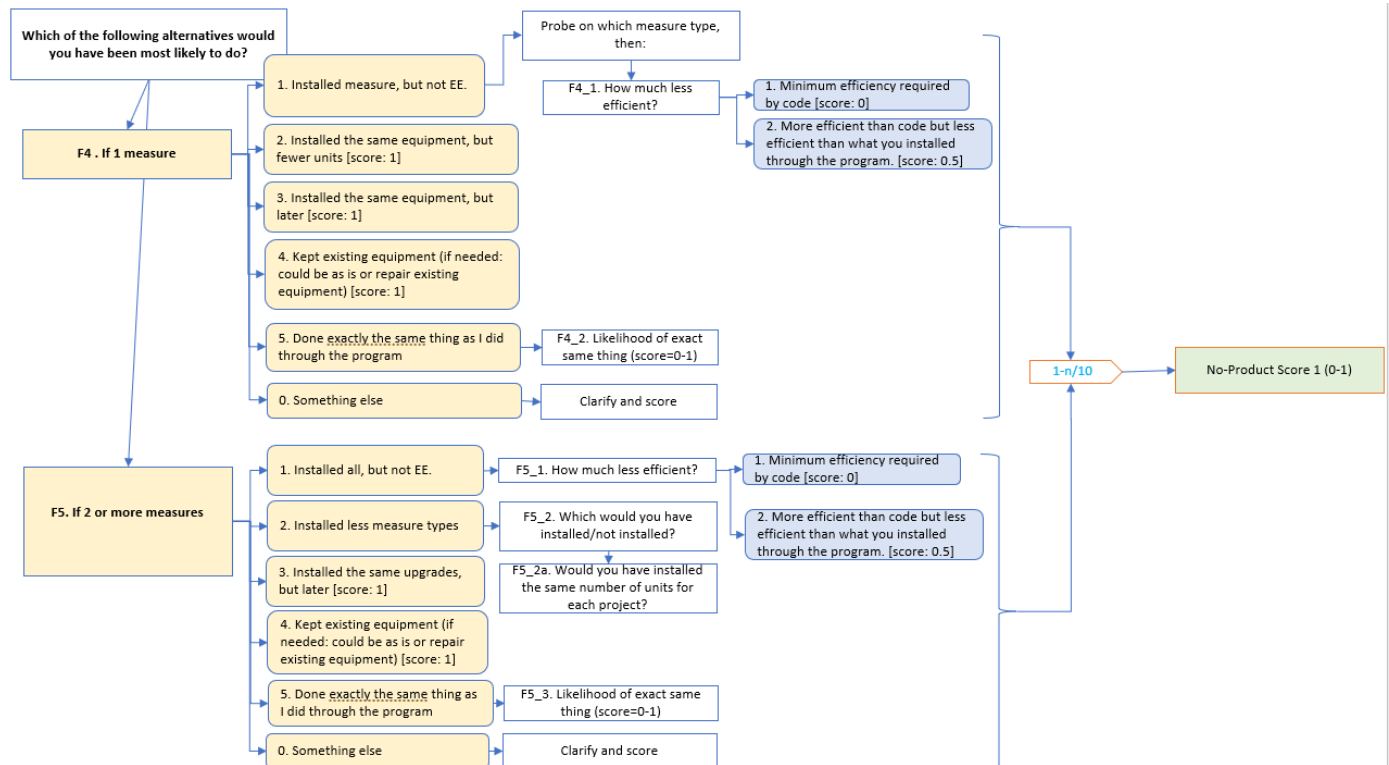


No-Product Score

The No-Product Score is a measure of what the participant would have done if the product had never existed. In contrast to the Product Influence Score, which asks how influential the product was on a customer's decision to install equipment, the No-Product Score asks whether that decision would have been different absent the product. To measure the No-Product Score, the evaluation team used question F4 and F5 (based on the number of measures the customer installed) in Figure 2 to determine what the customer would have done if the product did not exist and provide a score on a 0-1 scale.

The evaluation team then averaged the Product Influence Score and the No-Product Score together to estimate an initial free-ridership score for each participating customer respondent.

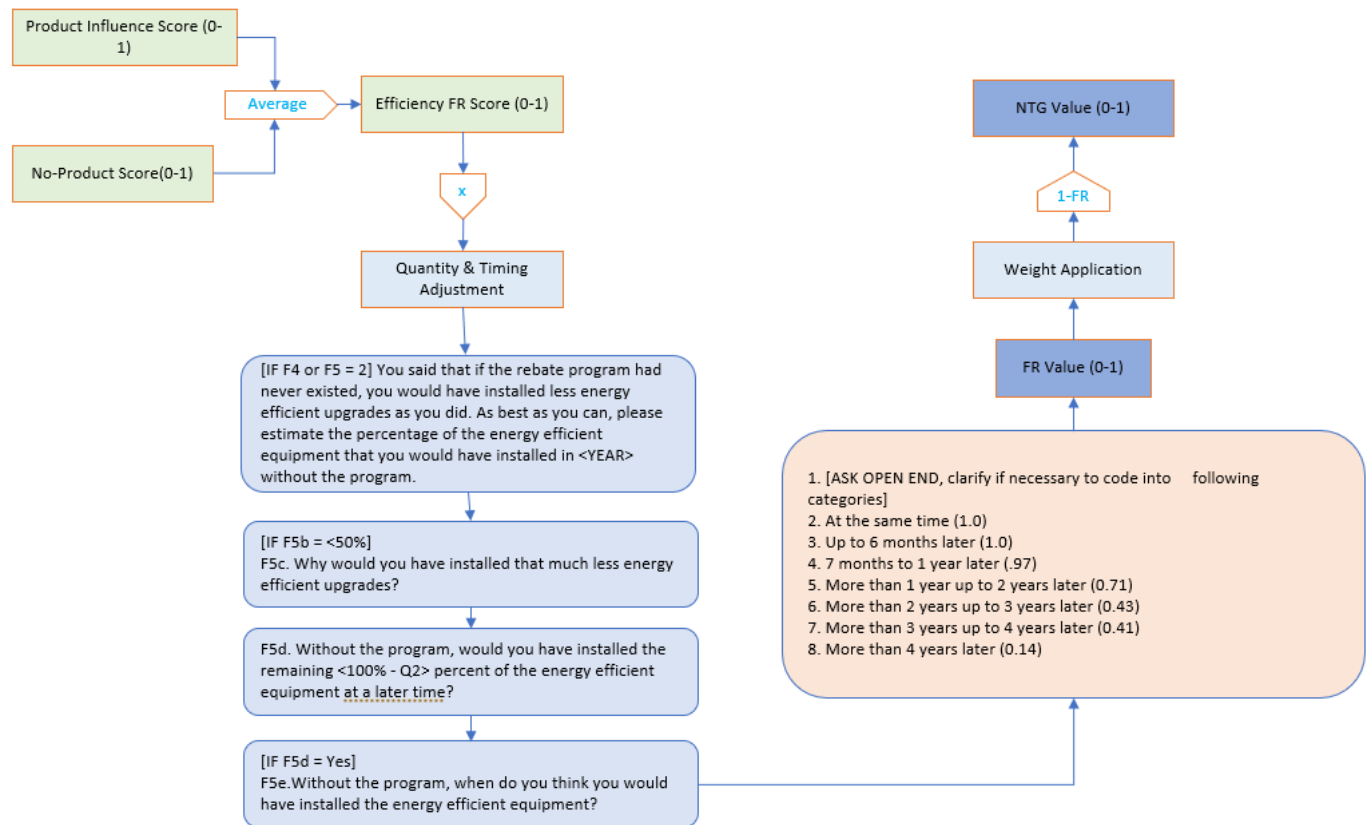
Figure 2. No-Product Score Approach



Quantity & Timing Adjustment

The evaluation team applied quantity and timing adjustments to overall free-ridership using survey responses, based on questions F4 and F5 in as shown in Figure 4. Unlike the Product Influence Score and No-Product Scores, which measure product influence on equipment installation overall, the timing and quantity adjustments measures whether the product influenced the timing of equipment installation, or the amount of equipment installed. To determine whether a timing adjustment should be attributed to a participating customer, the evaluation team asked respondents whether they installed their equipment earlier than they otherwise would have due to the product’s influence. To determine whether a quantity adjustment should be attributed to a participating customer, the evaluation team asked respondents whether they would have installed less energy efficient upgrades if the product never existed.

Figure 3. Quantity & Timing Adjustment and Final NTGR Approach



Qualitative Adjustments

The population size for the Whole Home Efficiency product was small, with a total participating population of 19 customers between April 2020 and Quarter 2 of 2022. The evaluation team was able to interview eight respondents from this population. Due to the limited data sources, qualitative feedback, in addition to quantitative indicators, played an important role in our analysis. Following the Illinois TRM Study-Based Protocol, the evaluation team built many open-ended questions into the interview to capture all key details regarding each participating customer’s experience. When applicable, the evaluation team adjusted participating customer free-ridership scores based on qualitative findings from participating customers and corresponding trade partner interviews.

Spillover

The evaluation team plans to analyze spillover based on feedback from both participating and nonparticipating customers. This section describes our method for calculating spillover from these two types of customer groups.

Participant Spillover. The spillover metric represents additional savings achieved as a result of product activities, outside of rebated measure savings, by product participants. The evaluation team incorporated two measure attribution scores; the first incorporates the influence the product had on the purchase of this additional measure (measure attribution score #1), and the second incorporates likely actions taken in absence of product participation (measure attribution score #2). The spillover score, as calculated below, must be greater than five in order for the

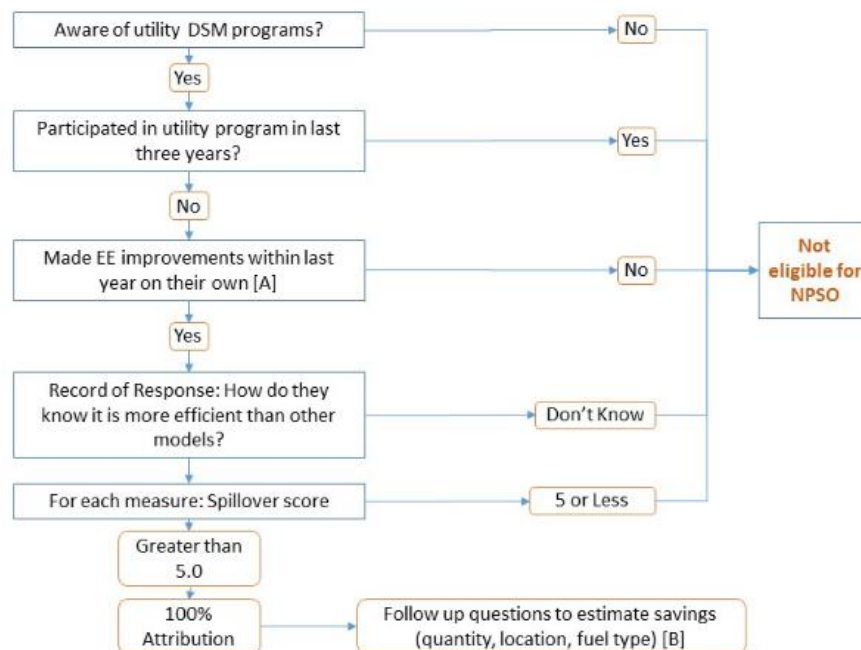
additional measure to qualify for spillover. When this criterion is met, the savings are added to product attributable savings.⁶

$$Spillover\ Score = \frac{Measure\ Attribution\ Score_1 + (10 - Measure\ Attribution\ Score_2)}{2}$$

Non-participating Customer Spillover: The evaluation team estimated nonparticipating customer spillover by using the IL TRM “Nonparticipant Spillover Measured from Customers” Protocol (NPSO Protocol).⁷ We defined nonparticipating customers as those customers who have no record of having completed a Whole Home project in Xcel Energy’s Salesforce system (i.e., have not participated since 2012) but who completed a qualifying audit. The interview asked nonparticipating customers if they have completed any qualifying energy efficiency projects but did not participate in the Whole Home Product for that project. The evaluation team did not find any instances of nonparticipating customer spillover.

To determine spillover-qualified equipment, the evaluation team first determined whether the customer knew about Xcel Energy’s energy efficiency products and/or marketing messages. If the customer was aware, the interview asked if they or anyone in their household made an energy efficiency improvement within the last year and, if so, what improvements they made. Responses to these questions generated a list of potential spillover measures (shown at point “[A]” in Figure 4. Customers were asked how they know the measure was more efficient than other models. If the respondent could identify the measure as ENERGY STAR or name an efficiency level that the evaluator could confirm is above the minimum federal standard, it counted towards NPSO.

Figure 4. Nonparticipating Customer Spillover Question Logic⁸



⁶ IL TRM Version 10, Volume 4, page 64-67.

⁷ IL TRM Version 10, Volume 4, page 64-67.

⁸ As depicted in the IL TRM Version 10, Volume 4, Figure 4-1, page 66.

Similar to participating customer spillover, the evaluation team incorporated two measure attribution scores: the first incorporated the influence the utility had on the purchase of this additional measure (measure attribution score #1), and the second incorporated whether the customer would have installed the measure had they not been influenced by the product (measure attribution score #2). The spillover score, as calculated below,⁹ must be greater than five in order for the additional measure to have qualified for spillover.

$$NPSO\ Score = \frac{Measure\ Attribution\ Score_1 + (10 - Measure\ Attribution\ Score_2)}{2}$$

Market Effects

The trade partner interviews offered important insights into “market effects” due to the Whole Home product. Such effects signify a transformation in the underlying structure and functioning of the market. Market effects can take many forms and may result from product impacts in a market over time. Examples of market effects include trade partners changing their business models based on the influence of the product—for instance, a trade partner may be more likely to promote comprehensive efficiency upgrades to residential customers knowing that a rebate is available for customers. Over time, the contractor builds this into their general approach to marketing and selling cooling measures. The interviews included questions to assess any long-lasting changes to trade partner practices.

Estimating a Net-to-Gross Ratio.

By design, our final estimated NTGR recommendation includes data from mixed methods research – both quantitative data and qualitative data. Our initial NTGR estimates were calculated separately and estimated using self-reported participating customer responses, trade partner reported NTGR interview responses, and nonparticipating customer survey responses. The formula to calculate the retrospective NTGR is as follows:

$$NTGR = 1 - (Free - Ridership) + (Spillover\ Ratio) + (Market\ Effects\ Adder)$$

After the initial NTGR estimates were calculated, we then utilized the quantitative and qualitative data to construct a logical, internally consistent, and coherent narrative of product attribution that attempts to identify all possible pathways of Xcel Energy influence¹⁰. We relied on the following data sources to construct the NTGR:

- ◆ Participating customer interviews
- ◆ Nonparticipating customer interviews
- ◆ Trade partner interviews
- ◆ Non-participating trade partner interviews

⁹ IL TRM Version 7, Volume 4, page 35-36.

¹⁰ We looked at the variability of results between responses, though we will have higher confidence because we looked at a census rather than a sample due to the small number of participants.

Based on these results, we then adjusted the NTGR to create a final recommended NTGR that was consistent with this narrative and is informed by the overall purpose and design of the product. The final NTGR estimate was based on the professional judgment of our team after considering all available quantitative and qualitative data. We also completed sensitivity testing by weighting our findings by both kW and kWh to determine whether weighting by one or the other has a significant impact on the NTGR.

Ultimately, evaluation team weighted each free-ridership score by the total savings for that measure, so that the score is representative of population-level savings (i.e., measures with a larger share of total kWh are weighted more heavily, as they have more influence on the total product savings).

Prospective Net-to-Gross Ratio

The evaluation team recommended a prospective NTGR that was forward-looking and reflected upcoming changes to the market and known changes to the product, such as the switch to a pay-for-performance model for insulation measures. The NTGR reflected any recommended adjustments to the retrospective NTGR, based on evidence from the evaluation findings, including results from participating and non-participating customers, participating and non-participating trade partners, staff interviews, and peer utilities. Trade partners were asked about the importance of the rebates in driving the installation of comprehensive residential energy efficiency measures in Colorado. In developing the final recommended NTGR, the evaluation team will follow the Illinois TRM protocol, which recommends that the evaluation team assess each data collection activity based on considerations of the likely bias, accuracy, and representativeness of the findings. Additionally, we used input from the staff interviews to inform potential future changes to the product and incorporate those into the final estimated NTGR. We also incorporated results from the benchmarking research regarding prospective NTGRs used in other states to inform our estimate.

Appendix B: Data Collection Documents

Appendix B contains materials related to data collection including the peer utility benchmarking interview guide, staff interview guide, non-participating customer interview guide, participating customer interview guide, participating customer interview guide, participating trade partner interview guide, and non-participating trade partner interview guide.

B.1 Peer Utility Benchmarking Interview Guide

To support the process and impact evaluation of the 2022 Xcel Energy efficiency products, the TRC evaluation team benchmarked the Xcel Energy products against peer utilities. The objective of the benchmarking was to identify opportunities to improve the Xcel Energy products based on a comparison of peer utility programs’ design, delivery, and processes. In addition, benchmarking allows the evaluation team to understand the performance of the product in context with the performance of other utilities. To conduct the benchmarking, the evaluation team conducted secondary research on the peer utilities identified and performed in-depth interviews with program managers at the peer utilities.

This document presents the in-depth utility interview guide for Colorado Whole Home Efficiency. Interviews were conducted with four to six of Xcel Energy’s peer utilities detailed in Table 8 below. Target respondents were managers of programs related to implementing energy efficiency measures in residential homes.

Table 8. List of Potential Peer Utilities

Utility (State)	Program Name	Region	Priority Level
Arizona Public Service (Arizona)	Home Performance with ENERGY STAR	Southwest	High
Mass Save (Massachusetts)	Home Energy Assessment	Northeast	High
Southwestern Electric Power Company	Home Performance with ENERGY STAR	Southwest	High
Salt River Project (Arizona)	Home Performance with ENERGY STAR	West	High
Consumers Energy (Michigan)	Home Performance with ENERGY STAR	Midwest	High
Austin Energy (Texas)	Home Performance with ENERGY STAR	South	High
Rocky Mountain Power (Utah)	Wattsmart Business	West	Medium

Columbia Water & Light (Missouri)	Home Performance with ENERGY STAR	South	Medium
SMUD (California)	Home Performance Program	West	Medium
Black Hills Energy (Arkansas)	Home Energy Savings Pathway (Home Performance)	West	Medium
Energy Trust of Oregon	Home Performance with ENERGY STAR	West	Medium
PG&E (California)	Efficiency First	West	Low

Table 9 identifies the interview questions related to each key performance indicator of peer utility programs. This information was used to benchmark the size and relative success of other programs in the market. TRC performed secondary research ahead of conducting the peer utility interviews and only asked these questions of program administrators as confirmation of our understanding or to fill in missing information.

Table 9. Mapping of Interview Questions to Indicators

Key Performance Indicator	Data Needed	Interview Question
Program energy savings goals	<ul style="list-style-type: none"> 2021 program energy savings goals (MWh) 2021 program’s savings (MWh) 2021 total energy efficiency portfolio goal (MWh) 	C2, C4, C5
Program budget -cost of acquisition (e.g., \$/MWh, \$/Mcf)	<ul style="list-style-type: none"> 2021 program budget 2021 total gross energy savings for each peer program 	C4, C6
Customer Participation Levels	<ul style="list-style-type: none"> Number of customers participating 	C1
Cost test values	<ul style="list-style-type: none"> TRC or UCT values 	C7
Net-to-gross	<ul style="list-style-type: none"> NTG ratio 	C3

Table 3 identifies the interview questions related to each contextual theme or research objective.

Table 3: Mapping of interview questions to contextual themes

Contextual themes	Data Needed	Interview Question
Program description and tracking	<ul style="list-style-type: none"> Overall program objectives, both energy and non-energy related Implementation strategies, program eligibility criteria, audit requirements Program staffing, the length of program operation, any recent changes to the program, and future outlook 	B1, B2, B3, E1-E3
Program performance	<ul style="list-style-type: none"> Program and overall residential portfolio energy savings goals and actuals Program participation goals Strategies for improving program cost-effectiveness 	C1, C2, C3, C4, C5, C6, C7, C8
Customer and Trade partner engagement	<ul style="list-style-type: none"> Strategies for increasing and maintaining customer engagement through the process of participating Methods used to increase customer awareness of any energy efficient home upgrades Process for monitoring customer satisfaction or complaints Supporting trade partner engagement through the process of participating Motivating trade partners to become program-qualified trade partners 	D1, D1a, D1b, D1c, D2

Recruitment

- INTRO 1 Hello, this is <INTERVIEWER NAME>, calling from TRC on behalf of Xcel Energy. Is <CONTACT NAME> available?
- INTRO 2 We are working with Xcel Energy on a benchmarking and best practices study of program offerings with multiple energy efficiency improvements for residential customers. As part of this study, we are reaching out to peer utilities to learn about innovative strategies and best practices in this type of offering.
- We would like to include <UTILITY> in this study, as your program, <PROGRAM NAME>, has been identified as peer program similar to Xcel Energy’s Whole Home Efficiency product (previously called Home Performance with ENERGY STAR). In your interview, we will talk about your program’s design and implementation, as well as its successes and challenges. As a thank you for your time, we would be happy to share an anonymized version of our report with you once we’ve completed our research.
- [IF NEEDED] We will not be requesting any customer or participant data.
- INTRO 3 Can we include your utility in the study?
- Yes [RECORD CONTACT INFORMATION; SETUP INTERVIEW TIME; EMAIL INTERVIEW TOPICS]
 - No [DISCUSS CONCERNS; ANSWER QUESTIONS; ATTEMPT TO CONVERT TO “YES”]

Section A: Interview Introduction

Thank you for taking the time to speak with us today. We have a set of questions that should take approximately 45 minutes. We will combine the information you provide with information gathered from other interviews before reporting summarized information back to Xcel Energy.

Before we begin, do you have any questions about the interview or research in general?

Is it alright if we record the conversation for note taking purposes? [RECORD IF ALLOWED AND CONFIRM YOU ARE RECORDING ONCE RECORDING BEGINS]. Thanks, we are recording now.

A1. First, can you take a moment and explain your **role and scope of responsibilities** with respect to the PROGRAM? [IF ALREADY KNOWN, REWORD TO CONFIRM]

Probe 1: Approximately how long have you held this position?

Probe 2: What previous positions did you hold at the utility?

Probe 3: Whom do you report to in the overall organizational structure?

Section B: Program Design & Tracking

B1. We'd like to talk through the **basic design and organization** of your PROGRAM.
[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH ON PROGRAM]

a. Can you describe the [PROGRAM] at a high level?

b. What are the program's overall objectives?

Probe: Energy and non-energy objectives

c. What are the program eligibility criteria?

Probe: Does the program have multiple paths of participation (e.g., with and/or without an audit)?

d. Is your program run by utility staff or a third-party implementer? (Ex: Franklin Energy, DNVGL, Clear Result)

Probe: (If run by a third-party implementer) What are the implementer's roles and responsibilities? (e.g., marketing, financial assistance, applications, technical assistance, education, contractor/trade partner support, drop ship/ direct install)

e. How many <PROGRAM STAFF OR IMPLEMENTER STAFF> members support the program? (Ex: Prog. Manager, Field Rep., engineer, others? %FTE on this program?)

f. Have there been any recent changes to the program?

[If yes 1] What was the reason for the change?

[If yes 2] How have these changes affected the program's operations or outcomes?

g. Are there any program changes being considered for the future?

[If yes] What is the expectation for the change?

B2. Can you describe the implementation strategies used by staff or implementers? [PROBE for elements not discussed previously, example: Audits? Direct install? Energy advising?]

- a. What is the typical length of a project? (From initial contact through installation)
- b. Are there any timeline requirements (e.g., projects must be completed by a certain time after the audit)

B3. Next, I'd like to talk about your program's efficiency incentives.

[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH. CAN ASK QUESTIONS BELOW OR ASK RESPONDENT IF OK TO FOLLOW UP VIA EMAIL]

- a. What types of measures do you offer? [PROBE: Prescriptive/Custom; HVAC, air sealing & insulation, washers/dryers, water heaters, smart thermostats] OR from the information I can find online, I understand that you offer [TYPES OF MEASURES]
- b. **Probe if program bundles upgrades:** Do you offer incentives through stand-alone programs for the measures that are eligible for your program? If yes, are the incentive levels the same by measure between both programs?
- c. Can you recommend a web page or other resource where I can find a list of your available measures and their incentive values?

If "NO": What specific measures are offered? What are the incentive levels for each measure?

- d. Do any of your measures use a "pay-for-performance" model for calculating rebate values?

[If yes] Which measure employ that model?

[If yes] Please describe how those rebates are calculated?

[If yes] What has the program's experience with pay for performance been like? What would you say are the strengths and challenges of the model?

- e. Do you offer a bonus incentive for implementing multiple measures?

[If yes] Please walk me through the process of applying for and receiving the bonus incentive from the customer perspective?

[If yes] How much is the bonus?

- f. Do the program's rebate levels change over time?

Probe 1: Do the rebate levels change to match the stand-alone programs (if applicable)?

Probe 2: Do the rebate levels change as equipment prices fluctuate?

[If yes] How do you track prices and determine rebate levels?

Section C: Program Performance

Next, I'd like to talk about the participation and energy savings achieved through the <PROGRAM> in 2021. **[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH. CAN ASK QUESTIONS BELOW OR ASK RESPONDENT IF OK TO FOLLOW UP VIA EMAIL]**

C1. How many projects were completed in 2021?

- a. (If applicable) How many audits were completed in 2021?

- b. How many incentive applications were submitted in 2021?
- C2. What were the program's energy savings goals in 2021? (MWh) (Therm)?
- C3. Are these goals based on gross or net savings?
 - a. Did/will you apply a NTG ratio to these savings?
 - b. What NTG ratio do you use?
 - c. What methods are used to calculate NTG ratio?
 - d. Are NTG ratios estimated at the program level, measure level, or both?
- C4. How much net/gross energy savings did the program report in 2021?
- C5. What was the total energy efficiency portfolio goal in 2021?
- C6. We'd like to know more about the budget or total operating costs of your program to get a sense of the utility cost of energy savings. Ideally, this includes program incentives, salaries of program staff (including support staff who may not work on the project full-time), marketing, consulting, and other overhead.
 - a. What is the program's total operating budget?
 - b. If sub-programs exist, how does this break down between sub-programs?
- C7. What type of cost effectiveness test is applied to the program?
 - a. If Total Resource Cost (TRC), what was the TRC in 2021?
 - b. If Utility Resource Cost (UTC), what was the UTC in 2021?
- C8. What strategies, if any, have been used to improve the cost-effectiveness of the program?

Section D: Program Participation

Next, I'd like to talk about program outreach and marketing. **[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH ON PROGRAM]**

- D1. What steps does the utility take to engage potential program participants?
Probes:
 - What marketing practices do you use to increase customer awareness of the program?
 - a. What has been the most effective?
 - b. What has been the least effective?
 - c. Do you target certain types of customers?
- D1a. What steps do you take to keep program participants engaged throughout the process of participating in the program?
PROBE: [If program requires customers install multiple projects] How have you been successful in maintaining engagement with participants as they complete each project?
- D1b. What steps does <UTILITY NAME> take to manage participating customer engagement?

Probe: How do you monitor complaints/satisfaction and track progress

D1c. What steps does the utility take to educate customers on the benefits of energy efficient home upgrades, more generally?

- a. What has been the most effective?
- b. What has been the least effective?

D2. The next few questions discuss how your program works with trade allies.

a. About how many trade partners are active in your program?

Probe: About how frequently does a typical trade partner participate in a given year? [i.e., do a small number of trade partners participate frequently, or do many trade partners participate less frequently?]

b. What roles do trade partners play in driving customer participation in the program?

Probe: How do customers connect with/identify trade partners who can help them complete home upgrades?

Probe 2: Do trade partners ever need to work with other trade partners outside their specialties to participate in [PRODUCT]?

- If yes, do they receive support from your utility to do so? How do they connect with the appropriate trade partner?

c. How do you market the program to trade partners? From your perspective, what are the primary motivators for trade partners to participate in the program?

d. Are there eligibility requirements trade partners must meet in order to participate in your program?

[If yes] Please walk me through the process for the trader partners to become product-qualified trade partners.

e. What channels do you use to engage with trade partners?

Probe 1: Emails, phone calls, meetings or awards ceremonies?

Probe 2: Which of these channels do you consider to be the most effective at engaging trade partners and driving participation in the program?

f. What steps do you take to maintain engagement with participating trade partners?

Probe: What incentives (if any) do you offer directly to trade partners (e.g., regular communication, training, trade partner bonuses, prizes/competitions)?

g. What barriers do trade partners face to participation in your program?

Probe: Are there any particular specialties that you have a more difficult time engaging? If so, do you do any specialty-specific engagement?

Section E: Program Strengths and Challenges

Next, I'd like to talk about the program's strengths and challenges.

[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH ON PROGRAM]

- E1. What do you view as the program's greatest strengths?
- E2. What are some challenges the program faces?
 - a. What has been done to address those challenges?
- E3. What are the opportunities you see for growth in the program?

Probe: Marketing and outreach? Support connections between trade partners and customers (and implementer, if any)? Potential overlap among other programs?

Section F: Closing

- F1. Thank you so much for your time. Before we finish, do you have any questions for me, or anything else you would like to add? If I come up with any additional questions that come from this interview, do you mind if I send you an email or give you a quick call?

B.2 Staff Interview Guide

This guide was used to interview staff associated with Xcel Energy's DSM products as part of the TRC Companies 2022 evaluation of the Xcel Energy DSM products. The interviews were semi-structured, with these questions serving as a basic guide for experienced TRC Companies staff during one-on-one phone interviews. As a guide for semi-structured interviews, these questions were necessarily asked verbatim, but served as a roadmap during the conversation.

Staff Interview Research Questions

The research questions that this research task is designed to address are listed below:

- ◆ Assess the extent to which the product design supports product objectives and customer service/satisfaction objectives.
- ◆ Understand Xcel Energy's current CO Whole Home Efficiency offerings.
- ◆ Assess the degree to which product resources are sufficient to conduct product activities with fidelity to the implementation plan.
- ◆ Collect staff feedback on implementation successes and challenges.
- ◆ Identify themes and issues for possible revisions to the standard evaluation plan.

Interview

Section A: Introduction

[If staff did not attend the kick-off meeting:] First, we would like to give you some background about who we are and why we want to talk with you today. TRC Companies is an independent consulting firm that works with electric and gas utilities to review and improve product operations and delivery. Xcel Energy contracted with us to perform an evaluation of their portfolio of energy efficiency products, and we're currently in the process of conducting interviews with product managers and key staff involved in designing and delivering the products to improve our understanding of Xcel Energy's DSM products and their influence on customers. We also want to understand how our research can be useful for you as Xcel Energy product staff and incorporate your priorities into our study so that the results are as useful as possible.

[ALL] Thank you for taking the time to speak with us today. My objective for this meeting today is to gain a deeper understanding of the CO Whole Home Efficiency product, what Xcel Energy hopes to achieve through implementing this product, how it operates, and a bit about your experiences with the CO Whole Home Efficiency product. We are interested in asking you some questions about CO Whole Home Efficiency product so we can benefit from your knowledge and experience to improve our understanding. I have a set of questions that should take approximately 45 minutes. We will combine the information you provide with information gathered from other interviews before reporting summarized information back to Xcel Energy.

Before I begin, is it alright if I record the conversation for note taking purposes? **[RECORD IF ALLOWED AND CONFIRM YOU ARE RECORDING ONCE RECORDING BEGINS]**. Thanks, we are recording now.

A1. First, can you take a moment and explain your role and scope of responsibilities with respect to the CO Whole Home Efficiency Insights product? **[IF ALREADY KNOWN, REWORD TO CONFIRM]**

[PROBE]

- Approximately how long have you held this position?
- What previous positions did you hold?
- Whom do you report to in the overall org structure?

Section B: Product Goals

I'd like to be sure I understand the goals of the CO Whole Home Efficiency product, both overall and specific.

B1. Can you take me through the key goals for the CO Whole Home Efficiency product?

[For staff outside of the Customer Solutions team] Can you take me through the key goals for the CO Whole Home Efficiency product, as it relates to your role?

B1a. Can you describe the product's savings goals? Do you have specific goals for individual components of the product (e.g., by measure type)?

B1b. Any other, non-energy goals?

B1b1. Any more immediate goals? For example, participation goals, customer engagement goals, improving customer satisfaction? Changing customer awareness of or attitudes about energy efficiency measures?

B1b2. Any longer-term goals? For example, reducing greenhouse gas emissions? Altering market behaviors?

B2. Have any of these goals changed in the last few years?

B2a. What was the rationale for changing them?

B2b. In your opinion, how have these changes affected the product's operations or its outcomes?

B2c. Where these changes a result of internal factors (to Xcel Energy), external factors, or a combination of both?

- B3.** Have any of these goals changed in 2020?
 - B3a.** What was the rationale for changing them? Probe: COVID-related changes?
 - B3b.** In your opinion, how have these changes affected the product's operations or its outcomes?
- B4.** What are "indicators of success" for the CO Whole Home Efficiency product?
 - B4a.** What are interim indicators that the CO Whole Home Efficiency product is or is not meeting its objectives or goals?
- B5.** What influences, if any, do you think the CO Whole Home Efficiency product has had on the market?

Section C: Product Activities

I would like to make sure I have a solid understanding of how this product operates and talk through the different components of the product. If there are any formal documentation and/or websites that you can refer me to as we walk through these next questions, I'd appreciate getting that information.

[TAILOR BASED ON WHAT IS ALREADY KNOWN FROM KICKOFF, ONLINE, AND OTHER RESOURCES]

- C1.** Can you describe the incentives and/or tools the product uses to achieve its goals, with incentives including both monetary incentives as well as services provided directly by someone on behalf of Xcel Energy: [PROBE ANY INCONSISTENCIES WITH BACKGROUND INFO AND WHAT THEY OFFER, CONFIRM INCENTIVES].
- C2.** Have any of these incentives changed in the last few years?
 - C2a.** If yes - What was the rationale for changing them?
 - C2b.** If no- Do you anticipate any changes in the near future?
- C3.** What activities do product and implementer staff engage in to achieve product goals?
 - Marketing?
 - Financial Assistance?
 - Applications?
 - Technical Assistance?
 - Education?
 - Contractor/Trade Partner Support?
 - Drop Ship/Direct Install?
 - C3a.** What tools are used to reach out to customers and/or market partners?
 - C3b.** Are these product activities modeled on another product or set of products?
- C4.** Have any of these activities changed in the last few years?
 - C4a.** What was the rationale for changing them?

- C4b.** In your opinion, how have these changes affected the product's operations or its outcomes?
- C4c.** Have you measured how these changes impacted savings or participation?
- C5.** What are the participation steps from a customer perspective?

Section D: Strengths and Challenges

Next, I'd like to get your feedback on how the product is running.

[TAILOR BASED ON WHAT IS ALREADY KNOWN]

- D1.** In your opinion, what are the strengths of the CO Whole Home Efficiency product as it is currently being run?
 - D1a.** What would you say is working well in terms of product design or implementation?
- D2.** What are the most significant challenges for this product at this point?
- D3.** What feedback, if any, do you receive from customers on the product? (PROBE FOR CUSTOMER ENGAGEMENT/ CUSTOMER SATISFACTION)
- D4.** What do you believe are the biggest barriers to getting customers to participate in this product?
- D5.** Are there any specific opportunities for improvement in the design or implementation of the product? Please describe.
- D6.** What would you like to see changed in how the product is designed or run, if anything?
 - D6a.** Do you think there are any roadblocks preventing these changes from happening?

Section E: Resources

- E1.** What resources do you rely on to implement the product?
 - E1a.** Product, implementer, sales staff?
 - E1b.** Management and product direction?
 - E1c.** IT tools and data tracking tools?
 - E1d.** Other resources?
- E2.** Are these resources sufficient to implement the product as designed?
 - E2a.** [IF NO] How could the product design/implementation change to be more efficient?
 - E2b.** [IF NO] What additional resources, if any, would help you implement the product as designed?
- E3.** Have any of these product resources changed in the last few years?
 - E3a.** What was the rationale for changing them? Any COVID related changes?

- E3b.** In your opinion, how have these changes affected the product's operations or its outcomes?

Section F: Product Tracking and Reporting

I understand that you are using Salesforce as your primary product tracking tool. I'd like to understand how product activities are tracked to understand what data might be available to us in our evaluation.

[TAILOR BASED ON WHAT IS ALREADY KNOWN]

- F1.** What kind of documentation is available for the different product? Implementation plans? Product manuals? Process maps?
- F2.** What kinds of data are collected for the CO Whole Home Efficiency product?
- F3.** Are there any data that you would like to collect for the CO Whole Home Efficiency product but haven't been able to?
- F4.** Are there any data/documentation not tracked in Salesforce that might be helpful for the evaluation?
- F5.** As part of our evaluation, we may want to speak to "near-participants," customers/distributors that were eligible to participate in the product, showed some interest in product participation, but didn't participate for whatever reason. Would these customers/distributors all be tracked in Salesforce?
- F6.** [For Engineering Staff] What kind of baseline does the product use to estimate energy savings? [PROBE FOR CODE VS. COMMON PRACTICE]

Section G: Closing

- G1.** Based on the kickoff meeting, we are planning to prioritize exploring differences across building types (looking toward what are the break points that can guide Xcel toward more savings, more impactful practices). Does this align with your understanding?
- G1a.** Do you have anything you would like to add to these priorities, remove from this set of priorities, or change about these priorities?
- G2.** Do you have particular questions that you would like to see answered by the evaluation? Why are these questions important?
- G3.** Do you have any other comments, concerns or suggestions about the product that we didn't discuss that you would like to make sure I know about?
- G4.** Are there any particular product staff members you would like to make sure we talk with?
- G5.** Do you have any peer utilities that you'd like us to include in the peer utility benchmarking interviews? Peer utilities could either include utilities that have been identified by internal or external parties as exemplary or utilities with a similar climate, customer mix, etc. to understand their practices.
- G5a.** What criteria is most important to you when selecting a peer utility (e.g., similar climate, similar time in market, etc.)?
- G5b.** What performance indicators are you interested in the evaluation benchmarking?

Thank you very much for taking the time in assisting us with this evaluation. If I come up with any additional questions that come from this interview, do you mind if I send you an email or give you a quick call?

B.3 Participating Customer Interview Guide

To support the process and impact evaluation of the 2022 Xcel Energy Whole Home Efficiency product, the TRC evaluation team conducted in-depth telephone interviews with participating customers. For the purpose of the interview, the evaluation team defined a participating customer as any customer who had installed equipment/upgrades and received a rebate through the product for that equipment between April 2020 and present. The research enabled the team to assess key process and impact evaluation objectives.

The remainder of the introduction provides the evaluation objectives and research questions which the participating customer interviews had been designed to address, a description of the sample population and the targeted completes, and fielding instructions for the interviewers. The introduction is followed by the interview guide.

Evaluation Objectives

The objectives for the Colorado Whole Home Efficiency product evaluation were to:

- ◆ Understand how best to engage customers and further motivate customers to participate.
- ◆ Identify the sources of the product’s challenges with trade partner engagement.
- ◆ Explore participating customer and trade partner product experiences.
- ◆ Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects.

The participating customer interviews did not provide feedback on all evaluation objectives. For reference, Table 10 provides the evaluation efforts used for each objective.

Table 10. Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Participating Customer Interview Objective
Understand how best to engage customers and further motivate customers to participate.	Process	Participating & nonparticipating customer interviews, participating & nonparticipating trade partner interviews, peer utility interviews	✓
Identify the sources of the product’s challenges with trade partner engagement.	Process	Participating & nonparticipating trade partner interviews, peer utility interviews	

Explore participating customer and trade partner product experiences.	Process	Participating & near-participating customer interviews, participating & non-participating trade partner interviews	✓
Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects	Impact	Participating and near-participating customer interviews, and participating and non-participating trade partner interviews	✓

Table 11 presents the research themes which this participating customer interview is designed to address, linking each research theme to the associated evaluation objective and interview question.

Table 11. Evaluation Objective, Interview Research Themes & Interview Question Crosswalk

Evaluation Objective	Interview Research Themes	Interview Question Number(s)
Understand how best to engage customers and further motivate customers to participate.	Motivations for participation	C3, C3k, C3l
	Opportunities for engaging customers and communicating benefits	C6b, C11
Explore participating customer and trade partner product experiences.	Product experience & satisfaction	C3, C4, C6, C7
	Barriers to participation	C7-C9
	Product perceptions	B4, C3l
	Benefits or value of product	C3l, C10
	Awareness and understanding of Whole Home Efficiency	A1-A1e
	Awareness and perceptions of energy efficient home upgrades	A3-A5, B1- B4
Interaction with implementer	A1e, B2b, B2c	

Estimate an overall NTG ratio including the major drivers of free ridership, spillover, and market effects. Estimate an overall NTG ratio documenting the product’s influence on customers’ decisions.	Product attribution/Freeridership	Section F
	Spillover	Section S

Sample & Target Completes

Table 12 summarizes the total sample that will be targeted for the interview. The population of participating customers between April 2020 and present was small, so the evaluation team attempted to contact the entire population (conduct a census) of all participating customers. To achieve 90% confidence level with +/- 10% precision for the program, the evaluation team would have needed to speak with 16 participating customers, which would represent an 84% response rate.

Table 12. Sample Population & Target Completes

Total Population	Target Completes
19	16

Sample Variables

Table 13 includes the sample variables that will be used to conduct this interview, as well as descriptions of these variables and potential codes.

Table 13. Sample Variables

Sample Variables	Variable Descriptions	Potential Codes
Interviewer Name	Name of interviewer from TRC	e.g., Emily Morton
MEASURE_DESC	The description of all of the specific equipment/projects installed in the customer’s home as part of the program	e.g., a mini-split heat pump, wall insulation, attic insulation
MEAS_COUNT	Number of measures installed through the Whole Home Efficiency product	e.g., 3
MEAS_1, MEAS_2, MEAS_3	Description of single measure installed through the Whole Home Efficiency product	e.g., Attic insulation
Contact	Contact name	e.g., Hannah Justus
Phone	Phone number for contact	e.g., 555-555-5555
MONTH	Month equipment was installed	e.g., February

YEAR	Year equipment was installed	2020
Spillover_Measure	Energy efficient home upgrade equipment installed without a rebate from Xcel Energy	e.g., air source heat pump

Fielding Instructions

We attempted to schedule interviews via email if email addresses were available. We supplemented email recruiting efforts with telephone calls as needed.

The following fielding guidelines were used for participating customer recruiting and interviews:

- ◆ Attempt each record five times on different days of the week and at different times.
- ◆ Leave messages on the first and fourth attempt.
- ◆ Experienced interviewers should attempt to convert "soft" refusals (e.g., "I'm not interested" or immediate hang-ups) at least once.
- ◆ The interview is considered complete when CLOSE2 is answered.
- ◆ Calling hours are 9 AM to 8 PM MST.

Interview Sections

- ◆ **Intro.** Introduction & Screening
- ◆ **A.** Awareness of Rebates & Energy Efficiency Home Upgrades
- ◆ **F.** Free Ridership (Residential)
- ◆ **S.** Spillover (Residential)
- ◆ **B.** Barriers & Motivations to Install Energy-Efficient Equipment
- ◆ **C.** Benefits, Satisfaction, & Feedback
- ◆ **D.** Demographics
- ◆ **Close.** Closing

Section Intro: Introduction & Screening

Intro1: Hello. This is <Interviewer Name> calling from TRC, a national research firm working with Xcel Energy. We're conducting a brief, 30-minute phone interview on Xcel Energy's behalf and offering a \$50 Tango gift card for your time. I'm hoping to speak to someone in your household who would be familiar with the energy efficient upgrades you made to your home in <YEAR>. Our records show that you or your contractor received a rebate from Xcel Energy for installing <MEASURE_DESC>. May I speak with <CONTACT>?

[Probe if customer is unfamiliar]

Intro1a: Just to confirm, since April 2020 did you have <MEASURE_DESC> installed in your home?

[ASK IF INTRO1 = Yes OR Intro1a = Yes]

Intro2. Are you the person in your household who is most familiar with the energy efficient upgrades installed through the Xcel Energy Home Performance with Energy Star rebate program, or at least as familiar as anyone else?

[ASK IF INTRO2 = No]

Intro3. Is there someone else that is knowledgeable about your participation in the Home Performance with Energy Star rebate program?

[If yes, collect contact information and a good time to call back]

[INTERVIEWER NOTE: In some cases, the person most familiar with the program may be a relative or friend at a different number.]

[ASK IF INTRO2 = Yes]

Intro6. Great! Is now a good time or should we call you back?

1. No objection – fine to continue
2. Objection **[SCHEDULE FOR ANOTHER TIME]**

Section A: Awareness of Rebates and Energy Efficiency Home Upgrades

A1. I'd like to start by asking about the home energy audit that was performed at your home and how you first heard about the Xcel Energy rebates for bundling energy efficient home upgrades through the Home Performance with Energy Star program? **[PROBE] Do you recall receiving any marketing from Xcel Energy regarding the program, for example, an email?**

A1a. Were you aware of the rebates available through Home Performance with Energy Star before you had a home audit performed?

[If audit conducted through Home Energy Squad]

A1b. How did you first learn about the Home Energy Squad assessments available through Xcel Energy?

[If the audit not conducted through Home Energy Squad]

A1b1. Who conducted the audit that you completed before participating in the Home Performance with Energy Star program?

A1b2. How did you first learn about the availability of that audit?

A1c. And what initially motivated you to have a home energy audit/Home Energy Squad assessment conducted at your home?

A1d. How did you sign up for Home Performance with Energy Star?

[PROBE] Did you call Xcel Energy to sign up? Did you sign up through your audit provider? Did you sign up through the website?

A1e. [If not discussed already] Did your audit provider give you information on Xcel Energy's Home Performance with Energy Star?

[If yes] What information do you recall the audit provider discussing with you?

A2. Who installed your home upgrades through the Home Performance with Energy Star program?

[IF MEAS_COUNT > 1]

- Did the same person install all of the home upgrades you made through the Home Performance with Energy Star program? If not, who installed the other upgrades?
- A3. Next, I'd like to understand a little more about your awareness of energy-efficient options for upgrading your home. Before your home energy audit, how familiar would you say you were with opportunities to increase energy efficiency in your home, on a scale of 1 to 5, where 1 means "not at all familiar" and 5 means "extremely familiar"?**
- A3a. How would you say your awareness of energy-efficient options for upgrading your home changed after your audit?**
- A4.** And before your home energy audit, what type of equipment would you say you were most familiar with? [PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]
- A5.** Before your home energy audit, what type of equipment would you say you were least familiar with? [PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]

Section F: Free-Ridership (Residential)

Next, I am going to ask about factors that may have influenced your decision to install the projects you completed through the Home Performance with Energy Star program.

- F1a. Thinking specifically about <MEAS_1>, how influential was the rebate available for this project through the Home Performance with Energy Star program on your decision to install these upgrades? Please use a scale from 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential." [INTERVIEWER NOTE: If respondent does not understand the meaning of the "influential" scale, can use alternate scale where 0 = "It did not matter at all" and 10 = "It mattered a great deal".]**

[IF MEAS_COUNT = 3]

- F1b. How influential was the bonus rebate for installing three home upgrades, available through the Home Performance with Energy Star program on your decision to install <MEAS_1>? Please use a scale from 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential." [INTERVIEWER NOTE: If respondent does not understand the meaning of the "influential" scale, can use alternate scale where 0 = "It did not matter at all" and 10 = "It mattered a great deal".]**

[ASK ALL]

- F1c. How influential was the home energy audit or Home Energy Squad assessment on your decision to install <MEAS_1>? This could include a conversation with the auditor or results received in your audit report. Please use a scale from 0 to 10, where 0 means "not at all influential" and 10 means "extremely influential." [INTERVIEWER NOTE: If respondent does not understand the meaning of the "influential" scale, can use alternate scale where 0 = "It did not matter at all" and 10 = "It mattered a great deal".]**
- F1d. How influential was any information or encouragement you received from an Energy Advisor on your decision to install <MEAS_1>? This could include a**

conversation with the auditor or results received in your audit report. Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.” If this question does not apply to you (you did not work with an Energy Advisor), please let me know. **[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]**

F1e. How influential was any other information or encouragement you received from Xcel Energy—including information found on Xcel Energy’s web site and the “Find a Contractor” tool—on your decision to install <MEAS_1>? This could include promotional or educational materials or talking to someone at Xcel Energy. This could also include talking to someone else that had participated in the Xcel Energy program. Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.” [INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

F1f. And how influential was the contractor recommendation on your decision to install <MEAS_1>? Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential”. [INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale, where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

F1g. Have you participated in an Xcel Energy rebate or energy efficiency program prior to this year?

[ASK IF F2d = Yes]

F1g_1. And how influential was your participation in the previous Xcel Energy program on your decision to install the <MEAS_1>? Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential”. [INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale, where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

1. [Numeric Open End (0 – 10)]

77. N/A

88. DK

99. REF

F2. In your own words, how would you describe the importance of the Xcel Energy Home Performance with Energy Star rebates on your decision to install <MEAS_1>?

F3a. Now thinking about your decision to install <MEAS_1>, how much would you say the Home Performance with Energy Star program influenced you to install energy efficient home upgrades after your audit? Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

[If MEAS_COUNT = >1]

F3b. How much would you say the Home Performance with Energy Star program influenced you to install multiple energy efficient home upgrades after your audit?
Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

[IF MEAS_COUNT > 1]

F6. According to our records, you also installed <MEAS_2> and <MEAS_3> through the Home Performance with Energy Star program. Was your decision-making process the same for these two projects as we just discussed for <MEAS_1>?

[IF NO, REPEAT F1-F6 battery for other measures; IF YES, proceed to F4]

Now I'd like you to imagine that the rebate program, including rebates available for each project and the bonus rebate for completing three projects, and any support provided by Xcel Energy after the audit, had never existed. Which of the following alternatives, would you have been most likely to do? Would you have...

F4. [If MEAS_COUNT = 1]

1. Made a less efficient upgrade?

F4_1. How much less efficient? [PROBE] Minimum efficiency required by code? More efficient than code but less efficient than what you installed through the program?

2. **[If applicable]** Installed the same upgrade but fewer units [Interviewer note: depending on measure type, clarify – example: 1 wall instead of 2 walls for insulation, less weather stripping, etc.]
3. Installed the same equipment but later.
4. Kept your existing equipment **[PROBE]** if needed: could be as-is or repair existing equipment]
5. Done exactly the same thing as you did through the program.

F4_2. On a scale of 1-10, with 0 being very unlikely and 10 being very likely, how likely would you have been to do exactly the same thing as you did through the program, if it did not exist?

6. Something else [SPECIFY]

F5. [If MEAS_COUNT > 1]

1. Installed the same type of upgrade you did, but less energy efficient.

[For each measure type:]

F5_1. How much less efficient? [PROBE] Minimum efficiency required by code? More efficient than code but less efficient than what you installed through the program?

2. Completed fewer projects (Installed fewer measure types)

F5_2. Which projects would you have not installed?

F5_2a. Would you have installed the same number of units for the project?

3. Installed the same upgrades but later.
4. Kept your existing equipment [**PROBE** if needed: could be as-is or repair existing equipment]
5. Done exactly the same thing as you did through the program.

F5_3. On a scale of 1-10, with 0 being very unlikely and 10 being very likely, how likely would you have been to do exactly the same thing as you did through the program, if it did not exist?

6. Something else [SPECIFY]

[INTERVIEWER NOTE: CLARIFY ANY DISCREPANCIES BETWEEN INFLUENCE SCORE AND COUNTERFACTUAL SCORE]

[If F4 = 2 OR F5 = 2]

F5b. You said that if the rebate program had never existed, you would have installed less energy efficient upgrades as you did. As best as you can, please estimate the percentage of the energy efficient equipment that you would have installed in <YEAR> without the program.

[IF F5b = <50%]

F5c. Why would you have installed that much less energy efficient upgrades?

F5d. Without the program, would you have installed the remaining <100% - Q2> percent of the energy efficient equipment at a later time?

[IF F5d = Yes]

F5e. Without the program, when do you think you would have installed the energy efficient equipment?

[IF F5e >= 1 year later]

F5f. Why would it have been that much later?

Section S: Spillover (Residential)

[ASK ALL]

S1. Since your participation in the rebate program in <MONTH> <YEAR>, have you or has anyone in your household made any energy-efficient upgrades or installed any energy efficient equipment in your home without a rebate from Xcel Energy? [**PROBE** for heating and cooling equipment, clothes washers or dryers, smart thermostat, air sealing and weather stripping, wall or attic insulation]

[Analysis note: "Like" Spillover]

[ASK IF S1 = Yes, ELSE SKIP TO S7]

S2. Did the rebate program influence you in any way to make these additional improvements?

[If yes] please specify]

[ASK IF S2 = Yes, ELSE SKIP TO S7]

S3a. What type of equipment did you install? [ASK OPEN END, COMPARE TO BELOW LIST OF WHE -ELIGIBLE EQUIPMENT]

[If type of heat pump is not mentioned, PROBE: Was it a ground source, air source, or mini-split heat pump? If not sure, code as simply “heat pump.”]

1. Central air conditioner
2. Evaporative cooler
3. Heat pump
4. Air source heat pump/cold climate air source heat pump
5. Mini-split heat pump/cold climate mini-split heat pump
6. Ground source heat pump
7. Gas furnace (95%+ AFUE)
8. Boiler
9. Tankless water heater
11. Electric heat pump water heater
12. ENERGY STAR clothes washer
13. ENERGY STAR clothes dryer
14. ENERGY STAR smart thermostat (eligible to enroll in AC Rewards)
15. Air sealing and weatherstripping 20% reduction
16. Wall insulation (30% up to cap)
17. Attic insulation (30% up to cap)
18. More efficient refrigerator
19. More efficient dishwasher
20. Efficient windows
21. Efficient doors
22. Other [SPECIFY]

[Ask for each response in S3a]

S4a. How many units of the <EQUIPMENT FROM S3a> did you install?

[INTERVIEWER NOTE: S4c – S6 FORM A LOOP THAT WE GO THROUGH FOR EACH OF THE FIRST TWO MENTIONS IN S3a/S3a2. (MOST RESPONDENTS WILL NOT HAVE MULTIPLE LOW-PARTICIPATING TRADE PARTNERS.) PIPE IN RELEVANT RESPONSE FROM S3a and S3a2 AS <Spillover_Measure> FOR EACH ROUND THROUGH THE LOOP.]

[ASK FOR EACH ITEM SELECTED IN S3a]

[FIRST SELECTED IN S3a]

S4c_1. How do you know that the <Spillover_Measure> you installed was energy efficient?

[PROBE IF S3a = 1 - 5]

- **PROBE:** What was the SEER of the... [DO NOT ASK FOR GROUND SOURCE HEAT PUMPS. Interviewer note: SEER ratings range from 13 to 30.]

S5_1. How important was your experience with the Home Performance with Energy Star program, including the equipment you installed through the program, in your decision to install the additional <Spillover_Measure> on your own? Please use a scale from 0 to 10, where 0 is “not at all important” and 10 is “extremely important”.

S6_1. If you had not received the rebate for <MEASURE_DESC>, how likely is it that you would have installed this <Spillover_Measure>, using a scale from 0 to 10, where 0 means you “definitely WOULD NOT have installed” and 10 means you “definitely WOULD have installed” them?

[SECOND SELECTED IN S3a]

S4c_2. How do you know that the <Spillover_Measure> you installed was energy efficient?

S5_2. How important was your experience with the Home Performance with Energy Star program, including the equipment you installed through the program, in your decision to install the additional <Spillover_Measure> on your own? Please use a scale from 0 to 10, where 0 is “not at all important” and 10 is “extremely important”.

S6_2. If you had not received the rebate for <MEASURE_NAMEA>, how likely is it that you would have installed this <Spillover_Measure>, using a scale from 0 to 10, where 0 means you “definitely WOULD NOT have installed” and 10 means you “definitely WOULD have installed” them?

Section B: Barriers & Motivations to Install Energy-Efficient Equipment

B1. Now I want to ask you a few questions about the choices you made when you installed your <MEASURE_DESC>? What are the reasons you chose to install the particular home upgrades you made?

B1a. What were your initial perceptions of the benefits of the efficient equipment you chose?

B1b. What (if any) were your initial perceptions of the drawbacks of the efficient equipment you chose?

- **[PROBE]** Did you have any hesitations or concerns about the equipment you chose, before you installed it?

- **[PROBE]** Did you consider any lower cost or lower efficiency equipment? If so, what was that equipment?
- B2.** What other considerations factored into your decision to install the equipment you chose?
 - B2a.** Were the upgrades you made through the Home Performance with Energy Star program recommended in your audit report?
 - B2b.** When you reviewed your audit report, how did you determine and prioritize which upgrades you wanted to make?
 - B2c.** Who (if anyone) from Xcel Energy did you talk to when determining what upgrades you wanted to make? **[PROBE]** The audit provider, an Energy Advisor, another staff member from the Home Performance with Energy Star program, someone else?

Section C: Benefits, Satisfaction, & Feedback

[ASK ALL]

- C3.** We just talked a lot about your decisions to install your equipment, now please rate the importance of the following factors in terms of your decision to participate in the rebate program through Xcel Energy, using a 1 to 5 scale where 1 is “Not at all important” and 5 is “Very important.” You can also tell me if something was not applicable to your experience or if you don’t know:
 - C3a.** Recommendation from a family member/friend/neighbor
 - C3b.** Interest in making multiple energy efficient upgrades to your home.
 - C3c.** Recommendation from a contractor
 - C3c_1.** Was it the same contractor who installed any of your Home Performance with Energy Star projects or someone else?
 - C3d.** Past experience with program’s participating contractors
 - C3e.** The dollar value of the rebate offered by Xcel Energy for efficient upgrades.

[ASK C3f IF MEAS_COUNT = 3]

- C3f.** Bonus rebate offered by Xcel Energy for installing multiple measures.
- C3g.** Information about the program benefits from Xcel Energy marketing materials (e.g., mailing, email, or ad)
- C3h.** Recommendation from an Xcel Energy representative
- C3i.** Previous participation in an Xcel Energy program
- C3j.** Are there any other factors that influenced your decision to apply for an Xcel Energy rebate through Home Performance with Energy Star, that I did not mention?

[ASK IF C3j = 1]

C3j_1. How would you rate the importance of < C3j>?

- 1. [NUMERIC OPEN END (1 – 5)]
- 88. DK

99. REF

C3k. What motivated you to participate in Home Performance with Energy Star, rather than applying for rebates for the standalone programs? [Clarify, if needed, that there are separate rebate programs for various types of energy efficiency equipment]

C3l. When you first learned of the Home Performance with Energy Star program, what were your initial perception of the benefits the program would offer you?

C3m. Did you have any concerns about needing to complete multiple projects within the two-year timeframe after your audit? If so, what were those concerns?

C4. Please rate your satisfaction with various aspects of your experiences with the equipment and rebate. For each, please rate your satisfaction on a scale from 1 to 5, where 1 is “very dissatisfied” and 5 is “very satisfied” or let me know if it is not applicable to you. How would you rate your satisfaction with:

C4a. The performance of the equipment you installed

C4b. The process of finding a qualified contractor

C4c. The contractor that installed the equipment

C4d. The installation of the equipment

C4e. Information provided from Xcel Energy on the rebate process

[For any C4a – C4e < 3]

C5a – C5e. Why weren't you satisfied with <RESTORE WORDING FROM C4a – C4f>

1. [OPEN END, RECORD VERBATIM]

88. DK

99. REF

C4f. The amount of time it took to receive your equipment rebate

[ASK IF C4f < 3]

C4f_1. Was there anything you are aware of that caused a delay in your rebate?

1. Yes [SPECIFY]

2. No

88. DK

99. REF

[ASK IF MEAS_COUNT = 3]

C4g. The amount of time it took to receive your bonus rebate for completing three projects.

[ASK IF C4g < 3]

C4g_1. Was there anything you are aware of that caused a delay in your rebate?

1. Yes **[SPECIFY]**

2. No

88. DK

99. REF

[ASK ALL]

C4h. The amount of the equipment rebates you received

[ASK IF C4h < 3]

C4h_1. Was the amount of the rebate you received different from what you were expecting?

[ASK IF C4h_1 = 1]

C4h_2. What amount were you expecting?

[ASK IF MEAS_COUNT = 3]

C4i. The amount of the bonus rebate for you received for completing three projects.

[ASK IF C4i < 3]

C4i_1. Was the amount of the rebate you received different from what you were expecting?

[ASK IF C4i_1 = 1]

C4i_2. What amount were you expecting?

[ASK ALL]

C4j. Support you received from Xcel Energy in deciding which upgrades to make.

C4k. The information received in your audit report.

[ASK ALL]

C6. Thinking about your experience from start to finish, how would you rate your satisfaction with the rebate program as a whole? **[IF NEEDED: Please use the same scale from 1 to 5, where 1 is “very dissatisfied” and 5 is “very satisfied”]**

[ASK IF C6 < 3]

C6a. Why weren't you satisfied with your experience with the rebate program?

[ASK IF C6 = 3 or 4]

C6b. What else could program staff do to improve your satisfaction with the rebate program?

1. **[OPEN END]**

88. DK

99. REF

C7. Next, I am going to ask you to rate how easy or difficult the following tasks associated with the rebate program were to complete, using the same scale from 1 to 5, where 1 is “very difficult” and 5 is “very easy”. [RANDOMIZE]

C7a. Complete the home audit requirement prior to participating.

C7b. Complete program applications, rebate forms, or other program paperwork

C7c. Get in touch with an Xcel Energy representative.

C7d. Determine eligibility and rebate tier.

C7e. Determine equipment models that are affordable within budget.

C7f. Complete the equipment installation through a contractor.

[IF MEAS_COUNT = 1]

C7g. Finding a contractor to complete the work.

[IF MEAS_COUNT > 1]

C7h. Finding contractors to complete each of your projects.

C7h_1. How did you find the contractors that completed each of your projects? [Probe for whether they contacted Xcel Energy for support in finding contractors, whether their contractor made a recommendation, did their own research, etc.]

[Ask for any C7a – C7f < 3]

C8a – C8f. Why wasn’t it easy to <RESTORE ANSWER WORDING FROM C7a – C7f>

1. [OPEN END, RECORD VERBATIM]

88. DK

99. REF

C9. What (if any) other challenges did you experience while participating in the Home Performance with Energy Star program?

C10. What is the program doing well, that they should continue doing?

C11. What value or benefits have you experienced as a result of participating in the Home Performance with Energy Star program? [PROBE AS RELEVANT for financial savings, energy savings, reduced maintenance, increased comfort, improved equipment performance, environmental benefits]

C12. What recommendations do you have for Xcel Energy to improve the Home Performance with Energy Star program? [**PROBE** for additional resources or tools that would have make it easier to participate]

Section H: Demographics

Thank you for your patience; I only have a few questions left.

H1. Which of the following best describes your home? [READ 1 – 5]

1. Single-family home

2. Single-family attached home, such as a duplex or townhome

3. Apartment building or condo with 2-4 units
4. Apartment building or condo with 5+ units
5. Mobile home
88. DK
99. REF

H2. Approximately what is your yearly household income before taxes? Please let me know when I read the category that applies to you. [READ 1 – 8]

1. < \$25,000
2. \$25,000 to \$34,999
3. \$35,000 to \$49,999
4. \$50,000 to \$74,999
5. \$75,000 to \$99,999
6. \$100,000 to \$149,000
7. \$150,000 to \$199,000
8. \$200,000 or more
88. DK
99. REF

Closing

CI1. These are all the questions I have. As a thank you for your input, we'd like to send you \$25 Tango.com gift card. Please permit me to gather the information we need to email the gift card to the intended recipient—this could be you, personally, or anyone else of your choosing.

[COLLECT CONTACT INFORMATION]

B.4 Non-Participating Customer Interview Guide

To support the process and impact evaluation of Xcel Energy's Whole Home Efficiency product, the TRC evaluation team conducted in-depth telephone interviews with near-participating customers. The evaluation team defined a near-participating customer as Xcel Energy customers who participated in a home audit in the past three years but did not install any eligible measures. The evaluation team attempted to interview both those customers who signed up for Whole Home Efficiency after their audit and those who did not. We conducted this research to enable us to assess key process and impact evaluation objectives.

The remainder of the introduction provides the evaluation objectives and research questions which the near-participating customer interview was designed to address, a description of the sample population and the targeted completes, a description of the sample variables to support programming the interview, and fielding instructions for the interview house.

Evaluation Objectives

The objectives for the Colorado Whole Home Efficiency product evaluation were to:

- ◆ Understand how best to engage customers and further motivate customers to participate.
- ◆ Identify the sources of the product’s challenges with trade partner engagement.
- ◆ Explore participating customer and trade partner product experiences.
- ◆ Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects.

The near-participating customer interviews did not provide feedback on all evaluation objectives. For reference, Table 14 provides the evaluation efforts used for each objective.

Table 14. Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Near-participating Customer Interview Objective
Understand how best to engage customers and further motivate customers to participate.	Process	Participating and near-participating customer interviews, participating and non-participating trade partner interviews, peer utility	✓
Identify the sources of the product’s challenges with trade partner engagement.	Process	Participating and nonparticipating trade partner interviews	
Explore participating customer and trade partner product experiences.	Process	Participating and near-participating customer interviews, and participating and non-participating trade partner interviews	✓
Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects	Impact	Participating and near-participating customer interviews, and participating and non-participating trade partner interviews	✓

Table 15 presents the research questions which this near-participating customer interview was designed to address, linking each research theme to the associated evaluation objective and interview question.

Table 15. Evaluation Objective, Interview Research Themes & Interview Question Crosswalk

Evaluation Objective	Interview Research Themes	Question Number(s)
Understand how best to engage customers and further motivate customers to participate.	Motivations for participation	B4-B4b, C4a, C7
	Opportunities for engaging customers and communicating benefits	B4f, C17, C7
	Differences in audit experience that could influence whether customer enrolls.	C1-C7
Explore participating customer and trade partner product experiences.	Barriers to participation	B4d-B4e, C4c, C6, C8-C8k_1
	Product perceptions	C3
	Awareness and understanding of Whole Home Efficiency	A1a-A3, C2-C2c
	Awareness and perceptions of energy efficient home upgrades	A3, B1-B3, B5
Estimate an overall NTGR	Major drivers of near-participant spillover	Section S

Sample & Target Completes

Table 16 summarizes the total sample that was targeted for the interview. Due to the small population size, the evaluation team attempted to contact every near-participating customer in the population.

Table 16. Population & Target Completes

Strata	Total Population	Target Completes	Response Rate Required to Achieve Target Completes
Near-participating Customers	58	32 ^a	55%

^a To reach 90/10 confidence, the evaluation team would need to complete 32 interviews, which represents a 55% response rate. This will likely be unfeasible, as the response rate for non-participant interviews is typically lower than 10%. The evaluation team will attempt to reach all near-participating customer to get as close to 90/10 confidence as possible but are setting a minimum target of 10 completed non-participating customer interviews.

Sample Variables

Table 17 includes the sample variables that were used to conduct this interview, as well as descriptions of these variables and potential codes.

Table 17. Sample Variables

Sample Variables	Variable Descriptions	Potential Codes
Interviewer Name	Name of interviewer from TRC	e.g., Nicole Thomas
Contact	Contact name	e.g., Hannah Justus
Phone	Phone number for contact	e.g., 555-555-5555
Spillover_Measure	Efficient equipment installed outside of the Xcel Energy program	e.g., "Air source heat pump"
Year	Year that audit was completed	e.g., 2020
Month	Month that audit was completed	e.g., May
Signup	Whether the contact signed up for Whole Home Efficiency	e.g., Yes

Fielding Instructions

We attempted to schedule interviews via email if email addresses were available. We supplemented email recruiting efforts with telephone calls as needed.

The following fielding guidelines were used for participating customer recruiting and interviews:

- ◆ Attempt each record five times on different days of the week and at different times.
- ◆ Leave messages on the first and fourth attempt.
- ◆ Experienced interviewers should attempt to convert "soft" refusals (e.g., "I'm not interested" or immediate hang-ups) at least once.
- ◆ The interview is considered complete when CLOSE2 is answered.
- ◆ Calling hours are 9 AM to 8 PM MST.

Interview Sections

- ◆ **Intro.** Introduction & Screening
- ◆ **S.** Spillover
- ◆ **B.** Awareness & Perceptions
- ◆ **C.** Decision-Making & Barriers to Participation
- ◆ **Close.** Closing

Interview Guide

Section Intro: Introduction & Screening

Intro1. Hello. This is **<Interviewer Name>** calling from TRC on behalf of Xcel Energy. We're conducting a brief, 20-minute phone interview on Xcel Energy's behalf and offering a \$25 Tango card for your time. Xcel Energy would like to better understand how customers like you think about and manage their energy use. Xcel Energy provides programs designed to help residential customers with energy saving efforts. Your input is very important to help Xcel Energy improve its energy programs and rebates.

We understand that you completed an energy audit for your home in **<MONTH>** **<YEAR>**, are you the best person to speak with about that audit and your home's energy usage?

[CONTINUE IF YES, IF NO, COLLECT CONTACT INFORMATION AND BEST TIME TO CALL]

[IF Intro1 = YES]

Intro2. Is this a good time to talk, or should I call you back at another time?

[IF Intro2 = YES]

Intro3. Great! Again, the interview takes about 20 minutes on average and, as a small token of appreciation, we are offering a \$25 Tango card that you will receive after completing the interview. Your responses will remain confidential, meaning that your name will not be attributed to your answers.

Section A: Awareness

A1a. On a scale of 1 to 5, with 1 being "not at all familiar" and 5 being "extremely familiar", how familiar would you say you are with Xcel Energy's energy efficiency rebate programs?

A1b. And using the same scale, how aware are you of Xcel Energy's rebates for bundling residential energy efficient upgrades at your home through the Home Performance with Energy Star program?

[PROBE] The Home Performance with Energy Star program provides rebates for energy-efficient home upgrades completed by Xcel Energy customers. You receive a rebate for each upgrade you complete, and then a bonus rebate once you complete three upgrades. To be eligible for Whole Home program, customers must first complete an audit through a Home Energy Squad Plus visit or find a qualified, participating trade partner to complete a Home Energy Audit with Blower Door and/or with Infrared.

[ASK A2 & A3 if CUSTOMER IS AWARE OF WHOLE HOME EFFICIENCY]

A2. How did you first become aware of the Xcel Energy rebates for bundling residential energy efficiency upgrades?

A3. When you first heard about the Home Performance with Energy Star program, what were your initial perceptions?

Section S: Spillover

S1. In the past year, have you or has anyone in your household made any energy-efficient upgrades or installed any energy efficient equipment in your home? [**PROBE** for heating and cooling equipment, clothes washers or dryers, smart thermostat, air sealing and weather stripping, wall or attic insulation]

[NOTE: ALL NEAR-PARTICIPATING CUSTOMERS THAT INSTALLED EQUIPMENT THAT COULD QUALIFY FOR WHOLE HOME EFFICIENCY WITHIN THE PAST YEAR WILL BE ASKED SPILLOVER QUESTIONS; ALL OTHERS SKIP TO NEXT SECTION]

[ASK IF S1 = Yes, ELSE SKIP TO B1]

S2. What type of equipment did you install? [**ASK OPEN END, COMPARE TO BELOW LIST OF WHE -ELIGIBLE EQUIPMENT]**

[If type of heat pump is not mentioned, PROBE: Was it a ground source, air source, or mini-split heat pump?]

1. Central air conditioner
2. Evaporative cooler
3. Heat pump
5. Ground source heat pump
6. Air source heat pump/cold climate air source heat pump
7. Mini-split heat pump/cold climate mini-split heat pump
8. Gas furnace (95%+ AFUE)
9. Boiler
10. Tankless water heater
11. Electric heat pump water heater
12. ENERGY STAR clothes washer
13. ENERGY STAR clothes dryer
14. ENERGY STAR smart thermostat (eligible to enroll in AC Rewards)
15. Air sealing and weatherstripping 20% reduction
16. Wall insulation (30% up to cap)
17. Attic insulation (30% up to cap)
18. Other [SPECIFY]

[INTERVIEWER NOTE: S3 THROUGH S12 BELOW FORM A LOOP THAT WE GO THROUGH FOR THE FIRST TWO ELIGIBLE EQUIPMENT TYPES. REFER TO RELEVANT RESPONSE FROM S2 AS <Spillover_Measure> FOR EACH ROUND THROUGH THE LOOP.]

S3. Did you receive a rebate through Xcel Energy for installing <Spillover_Measure>?

[ASK IF S3 = NO; IF S3 IS YES, SKIP TO NEXT SPILLOVER MEASURE OR NEXT SECTION]

S4. Are you planning to pursue a rebate for the **<Spillover_Measure>** in the next 12 months?

[ASK IF S4 = NO; IF YES SKIP TO NEXT SPILLOVER MEASURE OR NEXT SECTION]

S4a. Did the **<Spillover_Measure>** you installed qualify for an Xcel Energy rebate?

[IF S4a = YES]

S4b. Why did you not apply for the rebate for the **<Spillover_Measure>** you installed?

[IF S4a = NO or DON'T KNOW]

S4c. Would you have considered different equipment when you installed your **<Spillover_Measure>** if you had known that a rebate for higher efficiency equipment were available?

S5. In your own words, can you explain HOW your knowledge of the rebates or resources available through Xcel Energy influenced your decision to install the **<Spillover_Measure>**?

S6. How influential was any *information or encouragement you received from Xcel Energy* on your decision to install the **<Spillover_Measure>**? This could include promotional or educational materials or talking to someone at Xcel Energy. Please use a scale from 0 to 10 where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

S7. Did you receive any information from contractors or retailers about any Xcel Energy rebates prior to your decision to install the **<Spillover_Measure>**?

[ASK IF S7 = YES]

S7a. How influential was any *information you received from contractors or retailers* on your decision to install the **<Spillover_Measure>**? Please use a scale from 0 to 10 where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

S8. Prior to your decision to install the **<Spillover_Measure>**, did you hear about Xcel Energy programs or rebates through word-of-mouth? This could include talking to someone you know about Xcel Energy’s programs or hearing from someone else who had received a rebate from Xcel Energy.

[ASK IF S8 = YES]

S8a. How influential was this word-of-mouth from people about Xcel Energy’s programs on your decision to install the **<Spillover_Measure>**? Please use a scale from

0 to 10 where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- S9.** Just to make sure that we understand you correctly, please answer the following hypothetical question. If you had NOT known about rebates or resources available through Xcel Energy, would you still have installed the **<Spillover_Measure>**? Please use a scale of 0 to 10, where 0 means you definitely WOULD NOT have installed your energy efficient equipment and 10 means you definitely WOULD have done so.
- S10.** How do you know that the **<Spillover_Measure>** you installed was energy efficient? [PROBE for SEER level if heat pump/air conditioner, AFUE if furnace or boiler, ENERGY STAR rating, other efficiency ratings]
- S11.** What was the make and model of the **<Spillover_Measure>**?
- S12.** How many **<Spillover_Measure>**s did you install? **[INTERVIEWER NOTE: if respondent offers a range, insert the midpoint or round up to nearest whole number as needed]**
- 1. **[RECORD NUMBER]**
 - 88. DK
 - 99. REF

[INTERVIEWER NOTE, THIS IS THE END OF LOOP]

Section B: Awareness & Perceptions

[ASK ALL]

- B1.** Next, I'd like to understand a little more about your awareness of energy-efficient options for upgrading your home. Are you aware of things you can do to your home to make it more energy efficient?
- [IF YES]** **B1a.** Can you tell me more about what kind of opportunities to make your home more energy efficient you are aware of?
- B2.** What type of equipment would you say you were most familiar with? [PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]
- B3.** What type of equipment would you say you were least familiar with? [PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]
- B4.** Are you interested in making any energy efficient upgrades to your home in the next five years?
- B4a.** What is the likelihood you would make an energy efficient upgrade at your home in the next five years, on a scale of 1 to 5, where 1 means “not at all likely” and 5 means “extremely likely”?

[IF B4 = YES]

B4b. What type(s) of upgrade are you considering? [**PROBE** for equipment type, specifications, efficiency level]

B4c. When do you plan to make these upgrades?

B4d. What has prevented you from making these upgrades yet?

[IF B4 = NO]

B4e. What prevents you from making energy efficient upgrades to your home?

B4f. What changes to the program or to Xcel Energy's offerings would have made it more likely for you to make energy efficient upgrades to your home?

B5. How did you first learn about options for energy efficient upgrades at your home?

Section C: Decision-Making & Barriers to Participation

C1. We understand you had an energy audit completed at your home in <YEAR>, do you recall participating in that audit?

C1a. Could you briefly walk me through the process of participating in the audit? [**PROBE**: Did you receive a report with recommendations for energy efficient upgrades you could make to your home?]

C1b. What initially motivated you to complete a home audit through Xcel Energy?

C1c. Do you recall the auditor or energy advisor mentioning the rebates that were available for energy efficient upgrades through Xcel Energy? [**PROBE** for timing when rebates were mentioned]

[ASK C2-C2c IF CUSTOMER IS AWARE OF WHOLE HOME EFFICIENCY]

C2. Do you recall the auditor or energy advisor mentioning Xcel Energy's Home Performance with Energy Star program, where you receive rebates for making energy efficient upgrades and a bonus rebate once you complete three upgrades?

[IF C2 = YES]

C2a. At what point in the audit process did the auditor or energy advisor mention the availability of the Whole Home Energy rebate program?

C2b. Had you heard of the rebates available through the Home Performance with Energy Star program before completing your home energy audit? If yes, how did you hear of it?

[IF C2 = NO]

C2c. Have you heard of Home Performance with Energy Star since completing your audit?

If so, how did you hear about it? [**PROBE** for email advertisement, web search]

[ASK C3 IF CUSTOMER SIGNED UP FOR WHE]

C3. Do you recall signing up for the Home Performance with Energy Star program after completing your home energy audit?

[IF C3 = Yes]

C3a. What initially motivated you to sign up for the Home Performance with Energy Star program?

C3b. How did you sign up for the program? [**PROBE** for through an auditor, through the website form, called Xcel Energy to sign up, etc.]

C3c. When you were deciding whether or not to sign up for the Home Performance with Energy Star program, did you have any hesitations or concerns? If yes, what were those?

[ASK C4-C6 IF SIGNUP = NO BUT CUSTOMER IS AWARE OF WHOLE HOME EFFICIENCY]

C4. What factors did you consider when deciding whether to sign up for Home Performance with Energy Star?

C5. What prevented you from deciding to sign up for Home Performance with Energy Star?

C6. Is there anything that would have made it more likely for you to sign up for Home Performance with Energy Star?

[ASK ALL]

C7. Next, I'm going to read you a list of factors that could have been a challenge for you to participate in Xcel Energy's Home Performance with Energy Star rebate program.

On a scale from 1 to 5, where 1 is "not at all a challenge" and 5 is "very much a challenge", please indicate the extent to which you see the following as a challenge to participating in Xcel Energy's Home Performance with Energy Star rebate program.

You can also tell me if something was not applicable to your experience or if you don't know.

[RANDOMIZE ORDER, ANCHOR C15j LAST]

C7a. Lack of knowledge regarding energy efficient equipment

C7b. Lack of knowledge regarding rebate amounts

C7c. Amount of time it takes to install equipment

C7d. Finding a qualified contractor to perform equipment installations

C7e. Your preferred contractor does not offer the rebates

C7f. Amount of paperwork

C7g. Equipment cost

C7h. Installation cost

C7i. Completing your recommended energy efficient projects within the two years after your audit

C7j. Is there any other factor that you see as a challenge to participating in Xcel Energy's energy efficiency rebate program?

[ASK IF C7j = YES]

C7k. On a scale from 1 to 5, where 1 is "not at all a challenge" and 5 is "very much a challenge", please indicate the extent to which you see **<C7j factor>** as a challenge to participating in Xcel Energy's energy efficiency rebate program.

C8. Through which channels do you generally prefer to receive information from Xcel Energy about saving energy at your home?

Closing

Close1. These are all the questions I have. As a thank you for your input, we'd like to send you \$25 Tango card. Please permit me to gather the information we need to email the gift card to the intended recipient—this could be you, personally, or anyone else of your choosing.

[COLLECT CONTACT INFORMATION]

B.5 Participating Trade Partner Interview Guide

To support the process and impact evaluation of the 2022 Xcel Energy Whole Home Efficiency product, the TRC evaluation team conducted in-depth telephone interviews with participating trade partners. This guide presents the questions covered in the in-depth interviews of trade partners who participated in the Colorado Whole Home Efficiency product in 2021.

The population of participating trade partners was very small, with only three participating trade partners in 2021¹¹. Additionally, each of these trade partners was an insulation contractor. The evaluation team attempted to contact and interview all of these trade partners as part of this effort. We attempted to conduct these interviews after the participating customer interviews so that we could follow-up with trade partners about topics that customers identified as being particularly influential to their decision-making process.

The remainder of the introduction provides the evaluation objectives and research questions that guided the design of this guide, as well as fielding instructions for the interviewers.

Evaluation Objectives

The objectives for the Colorado Whole Home Efficiency product evaluation were to:

- ◆ Understand how best to engage customers and further motivate customers to participate.
- ◆ Identify the sources of the product's challenges with trade partner engagement.
- ◆ Explore participating customer and trade partner product experiences.

¹¹The evaluation team considered including participating trade partners in 2020 and 2022 to increase the study population. However, the trade partners who participated in 2020 but did not in 2021 will be interviewed as part of the non-participating trade partner interview task and there are so far no new trade partners in 2022.

- ◆ Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects.

The participating trade partner interviews provided feedback on each of the evaluation objectives. For reference, Table 18 provides the evaluation efforts used for each objective.

Table 18. Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Participating Trade Partner Interview Objective
Understand how best to engage customers and further motivate customers to participate.	Process	Participating & nonparticipating customer interviews, participating & non-participating trade partner interviews, peer utility interviews	✓
Identify the sources of the product’s challenges with trade partner engagement.	Process	Participating & nonparticipating trade partner interviews, peer utility interviews	✓
Explore participating customer and trade partner product experiences.	Process	Participating & near-participating customer interviews, participating & non-participating trade partner interviews	✓
Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects	Impact	Participating and near-participating customer interviews, and participating and non-participating trade partner interviews	✓

Table 19 presents the research themes which this participating customer interview was designed to address, linking each research theme to the associated evaluation objective and interview question.

Table 19. Evaluation Objective, Interview Research Themes & Interview Question Crosswalk

Evaluation Objective	Interview Research Themes	Interview Question Number(s)
Understand how best to engage customers and further motivate customers to participate.	Opportunities for trade partners to engage customers and communicate product benefits	M2 – M7
Identify the sources of the product’s challenges with trade partner engagement.	Barriers and challenges to participation from trade partner perspectives	B3, S8, S9a, S10, S11, M1a
	Trade partner’s product perceptions	B1a, S1b
	Trade partners’ sources of awareness and level of awareness of product	B1
Explore participating customer and trade partner product experiences.	Motivation to apply for rebates to understand if any particular product elements drive participation.	B2, S7
	Trade partner’s experience & satisfaction with the product	S1 – S5, S9, S9a, M1
	Benefits or value of product	S6
	Interaction between trade partner and implementer	S4, S9a
Estimate an overall NTG ratio including the major drivers of free ridership, spillover, and market effects. Estimate an overall NTG ratio documenting the product’s influence on customers’ decisions.	Product attribution to understand how product impacts trade partner’s decision to install and/or recommend measures	I1 – I3
	Market effects to understand how product impacts trade partner’s decision to change business strategy	I5

Recruiting Email

Subject: Earn \$50 for feedback on Xcel Energy Whole Home Efficiency product

Dear [FIRST_NAME],

Thank you for being a valuable Xcel Energy trade partner! TRC is conducting research on behalf of Xcel Energy to evaluate the Whole Home Efficiency program (formerly called Home Performance with Energy Star).

We are reaching out to Xcel Energy trade partners who participated in the Whole Home Efficiency program in 2021. We are hoping to schedule a brief phone interview with you, to better understand your experience participating in Whole Home Efficiency and collect feedback on opportunities for improving the program for both trade partners and customers.

Please let us know if you are interested in providing your input and if you have availability to speak with us some time in the next two weeks. Given the focus of this research, we expect the conversation to last between 30-45 minutes. We are available during the following times next week – Would any of these times work well for you? If not, please feel free to suggest a more convenient time, we are happy to work with your schedule.

[PROVIDE DATES AND TIMES]

Feedback provided through these types of research engagements are incredibly helpful in evaluating Xcel Energy's programs to better serve its trade partners and residential customers. In appreciation for your time and contribution, we are offering a \$50 Tango gift card, a digital gift card that can be redeemed at a variety of retailers, including Amazon, Apple, and Target.

If you have any questions for Xcel Energy about the purpose or legitimacy of this research, please contact Ann Kirkpatrick at ann.kirkpatrick@xcelenergy.com.

We appreciate your time and look forward to hearing from you.

Fielding Instructions

We attempted to schedule interviews via email if email addresses were available. We supplemented email recruiting efforts with telephone calls as needed.

The following fielding guidelines were used for trade partner recruiting and interviews:

- ◆ Attempt each record six times on different days of the week and at different times.
- ◆ Leave messages on the first and fourth attempt.
- ◆ Experienced interviewers should attempt to convert “soft” refusals (e.g., “I’m not interested” or immediate hang-ups) at least once.
- ◆ Calling hours are 7 AM to 5 PM MST.
- ◆ Record Interviews

Interview Sections

- ◆ **F. Background & Product Familiarity**
- ◆ **B. Barriers/Motivations for Trade Partners**

- ◆ I. Product Influence on the Market
- ◆ S. Satisfaction & Program Experiences
- ◆ M. Trade Partner Marketing
- ◆ **CLOSE.** Closing

Section F: Background & Product Familiarity

Thank you for agreeing to talk with me today. I expect this conversation to take about half an hour. To help me capture your responses accurately, is it okay if I record this call? The recording will be used for my note-taking purposes only. It won't be shared with Xcel Energy.

Do you have any questions before I start?

First, I want to take a few minutes to better understand your role and set the stage for the rest of the questions.

- F1.** How long have you been in your current role? **[IF < 5 YEARS]** What was your previous role? **[PROBE TO MAKE SURE WE ARE TALKING TO: Owner, Sales Manager, Salesperson]**
- F2.** Can you describe how much involvement you typically have with the Whole Home Efficiency (previously Home Performance with Energy Star) rebate program? This would include interaction with Xcel Energy staff, interaction with program administrator (implementer), marketing rebates to customers, installing equipment, filling out program paperwork, providing invoices, or fulfilling other requirements.
- F3.** How long has your company participated in the Home Performance with Energy Star/Whole Home Efficiency program?
- F4.** Does your company perform Whole Home Efficiency-eligible audits (Home Energy Audit with Blower Door or Infrared?)

Section B: Barriers/Motivations for Trade Partners

- B1.** Just to make sure we are talking the same language, the Whole Home Efficiency program offers rebates for residential energy efficiency improvements and a bonus rebate once the customer completes three projects. It is separate from the standalone rebate program that Xcel Energy offers for insulation projects. Please note that we aren't talking about minimum and maximum insulation or air sealing program requirements in this survey because the Whole Home Efficiency program mirrors the standalone program requirements.
 - B1a.** How do your customers learn about the Whole Home Efficiency program? **[PROBE: through the audit, an energy advisor, or through a trade partner (other than the auditor)?]**
- B2.** What do you see as the major differences between Whole Home Efficiency program and the standalone insulation program? Do you find it more or less challenging to participate in Whole Home Efficiency than the standalone insulation program? Why?

- B3.** What is the main reason you pursue rebates through Xcel Energy’s Whole Home Efficiency rebate program?
- B3a.** Why do you think your customers choose to participate in the Whole Home Efficiency program?
- B4.** What, if anything, about the Whole Home Efficiency rebate program keeps you from participating more? [**PROBE:** external factors e.g., housing market, new construction; internal factors e.g., collaboration with different trade partners, engagement with Xcel Energy or program administrator]
- B4a.** Are there any barriers particular to the Whole Home Efficiency program, that you do not experience in the standalone program? What are those barriers?
- B4b.** What, if any, barriers do your customers experience to participating in the program?
- B4c.** Do you ever experience any barriers to participation caused by the requirement for completing an audit prior to participation? If yes, what are those barriers?

Section I: Product Influence on the Market

Next, I have some questions about the relative importance of the Xcel Energy offering in your recommendation to pursue high efficiency measures with your customers.

- 1.** How would you describe the influence that the Whole Home Efficiency rebate program has on your decision to recommend [wall insulation with a post-job R-value of 13 or greater/attic insulation with a post-job R-value of 49 or greater] to your customers?
- I1a.** How has that changed in 2022, if at all?

Now, we are going to talk through two scenarios to understand how they impact the type of insulation you sell.

SCENARIO 1: STATUS QUO

- I2.** First, thinking about the current market,
- I2a.** About what percent of wall insulation projects you complete have a post-job R-value of 13 or greater?
- I2b.** About what percent of attic insulation projects you complete have a post-job R-value of 49 or greater?
- I2c.** For about what percent of your customers do you complete multiple projects (for example, wall insulation and attic insulation)?

SCENARIO 2: NO REBATE PROGRAM

- I3.** Now imagine that the Xcel Energy Whole Home rebate program were not available today, and you were not able to offer Whole Home rebates for attic or roof insulation or have any program support.
- I3a.** About what percent of wall insulation projects you complete would have a post-job R-value of 13 or greater? About what percent of attic insulation projects you complete have a post-job R-value of 49 or greater?

- I3b. How often would you complete multiple energy efficient upgrades for one customer?
- I3c. What effects would this have on your business? [**PROBE**: employees, sales techniques, number of clients, time it takes to sell projects]

[INTERVIEWER NOTE: CHECK FOR CONSISTENCY IN RESPONSES. SEEK CLARITY AS NEEDED.]

[ASK IF TIME AVAILABLE]

- I4. Do you do any work for customers served by another utility? In what regions? About what percent of the insulation you install in this region would qualify for Whole Home Efficiency? For about what percent of customers in this region do you complete multiple projects (for example, wall insulation and attic insulation)?
- I5. Have you changed the way you sell projects or conduct business because of the rebates available through Whole Home Efficiency?

Section S: Satisfaction & Product Experiences

Now, I'd like to talk more specifically about your experiences with the Whole Home Efficiency rebate program.

[ASK S1 IF NOT ALREADY DISCUSSED]

- S1. How long have you participated in the Whole Home Efficiency program through Xcel Energy?
 - S1a. Has your company's involvement with the product increased, decreased, or stayed the same over time? [**PROBE**: **Would you say the number of Whole Home rebate-eligible projects your customer has completed has increased, decreased or stayed the same?**]
 - S1b. Why has your company's involvement with the product changed?
- S2. In 2020, the program changed to no longer require that customers complete an insulation project to be eligible for Whole Home Efficiency. What were your perceptions of this change?
 - S2a. How has this change to the program caused you to participate in the program differently?
- S3. Were there any other program changes that impacted your participation?
 - S3a. If yes, what are the changes?
 - S3b. If yes, what are your perception of these changes? [**PROBE**] **Have these changes made the program easier to participate in, harder to participate in, or stayed about the same?** (Possibly ask to be more specific, e.g., percent change)
- S4. What interactions do you have with the program administrator, CLEARResult? [**PROBE** for support received from CLEARResult, positive or negative interactions with program administrator, any additional support desired]

S5. Next, I'd like to ask you about your satisfaction with several elements of the Whole Home Efficiency program. Using a scale from 1 to 5, where 1 is "extremely dissatisfied" and 5 is "extremely satisfied", please rate your satisfaction with the following items:

- S5a.** Your overall satisfaction with the Whole Home Efficiency program?
- S5b.** The Whole Home Efficiency staff from Xcel Energy? (Not from the program administrator/CLEAResult)
- S5c.** The size of the Xcel Energy Whole Home Efficiency rebates received after completing each project. [**PROBE:** How does your satisfaction compare with rebates received for similar projects through the standalone insulation program?]
- S5d.** The size of the Xcel Energy Whole Home Efficiency bonus rebate, received after the customer completes three projects.
- S5e.** The process for completing Whole Home rebate applications. [**PROBE:** How does your satisfaction compare with the applications completed for similar projects through the standalone insulation program?]

For the next items, please think specifically about your interactions and experience with the program administrator CLEAResult:

Again, please use a scale from 1 to 5, where 1 is "extremely dissatisfied" and 5 is "extremely satisfied", please rate your satisfaction with the following items:

- S5f.** Program administrator's communication with you
- S5g.** Program administrator's ability to answer your questions
- S5h.** Program administrator's knowledge of program rules
- S5i.** Program administrator's help with rebate applications in progress
- S5j.** Quality of program administrator's inspections and feedback

[ASK IF S5a-j < 5]

S5_1. Why were you dissatisfied with this component [Why did you provide that response?]

S5_2. What could Xcel Energy do to increase your satisfaction with the Whole Home Efficiency program? [**PROBE: as needed for specific factor**]

S6. What is the Whole Home Efficiency program doing well that they should keep doing?

S7. What can Xcel Energy do to increase your participation in the Whole Home rebate program?

S7a. Do you feel the trade partner incentive amounts are sufficient to motivate trade partners to participate in the program?

S7b. Are there any specific changes to the program rules that would motivate you to participate more frequently in the program?

PROBE for:

Audit prerequisite

Two-year window to complete three improvements

Top three improvements in audit

- S8.** What other challenges, if any, have you experienced participating in the Whole Home rebate program, that you have not mentioned? **[PROBE FOR DETAILS]**
- S9.** Are you ever required to work with contractors from other specialties (like HVAC) to help your customer complete all three upgrades required by the program?
[PROBE: Have you reached out to other contractors on behalf of customer?]

[IF S9 = YES]

- S9a.** Please tell me about situations where you have to work with other contractors from different specialties.
- What do you see as the benefits to working with other contractors?
 - What challenges have you experienced (if any) when working with other contractors?
 - What kinds of support did you receive from the program staff or program administrator (CLEARresult)?
- S9b.** How often do your customers talk to you about Xcel Energy’s energy advisors’ recommendations?
- S9c.** When do you talk with the energy advisors?
- S10.** Next, I’m going to ask you to rate a series of tasks associated with the Xcel Energy Whole Home Efficiency product. How difficult or easy would you say it was to complete the following tasks on a scale from 1 to 5, where 1 is “extremely difficult” and 5 is “extremely easy”?
- [ONLY LIST APPLICABLE ITEMS]**
- S10a.** Become a qualified trade partner for the Whole Home Efficiency program
- S10b.** Complete Whole Home Efficiency rebate forms (to apply for the rebate – post installation)
- S10c.** Submit Whole Home Efficiency rebate forms
- S10d.** Determine a measure’s program eligibility
- S10e.** Meet the Whole Home Efficiency program deadlines
- S10f.** Get in touch with an Xcel Energy representative

[ASK FOR ANY S10 ANSWERS IF < 4]

- S11.** What are the reasons why it wasn’t easy?

Section M: Trade Partner Marketing

Now, I have some questions about customer motivations and how you sell Whole Home Efficiency improvements to customers.

M1. What tools or resources from Xcel Energy have you found to be the most helpful in selling attic or wall insulation? (PROBE: for example, the Rebate Summary Sheet, the Xcel Energy website, the Energy Expert services)

M1a. What challenges in using these tools or resources?

[IF TRADE PARTNER DOES NOT CONDUCT AUDITS]

M2. Typically, do your customers come to you having already completed a Home Energy Audit or Home Energy Squad Visit? Do you ever have to direct your customers towards an auditor in order to participate?

M3. For customers who are not already aware of the program, do you promote the Whole Home Efficiency program with your customers? If so: How? How do you identify customers who are better candidates for the rebates?

M3a. What do you do to encourage customers to install multiple projects to get the bonus rebate?

M4. Have you ever sold multiple Whole Home Efficiency-eligible insulation projects to Xcel Energy residential customers without submitting an application for the Whole Home rebate?

[ASK NEXT THREE QUESTIONS IF M3 = YES]

M4a. How frequently does this happen?

M4b. What are the reasons why?

M4c. What would need to change for you to submit applications for these projects?
[PROBE: Is there anything Xcel Energy could do to help ensure applications are submitted for all eligible projects?]

M5. What could the Whole Home Efficiency program staff do to encourage:

M5a. More customers to participate?

[IF NOT ALREADY COVERED]

M5b. More trade partners to participate?

M6. Are you aware of any new or emerging insulation technologies on the market that Whole Home Efficiency should include in the program?

M6a. Do you interact with other types of trades/contractors on projects? If so, with which types of trades do you typically work? **[PROBE: Do you think that any of the work these trades complete could be an energy efficiency opportunity? (e.g., HVAC installers)]**

M7. The program is currently considering implementing a pay-for-performance model for calculating the Whole Home rebates provided for insulation projects, based on baseline R values. Incentives for insulation would be determined based on the customers' pre- and post-improvement R values, rather than a prescriptive incentive based on the cost of materials and labor. This would differ from how incentives are calculated for the stand-alone insulation program available through Xcel Energy. What are your perceptions of this potential change?

Closing

CLOSE1. Is there anything we didn't cover that you'd like to mention or discuss about your experiences working with the Whole Home rebate program?

1. Yes [**PROBE FOR ANSWER**]
2. No
88. DK
99. REF

CLOSE2. Would it be ok to follow up with email if we have any outstanding questions?

1. Yes [**COLLECT/CONFIRM EMAIL**]
2. No

CLOSE3. As a thank you for your input, we'd like to send you a \$50 Tango gift card, which is an online card that can be applied to a wide variety of businesses or nonprofits of your choice. Alternately, we could also donate \$50 to your local United Way in the name of your choice.

What would you prefer?

1. TANGO: Let me ask the information we need to email the gift card to the intended recipient—this could be you, personally, or anyone else of your choosing. [**COLLECT CONTACT INFORMATION**]
2. UNITED WAY: What zip code should we use to find your local United Way? In what name should I donate the \$50? [**COLLECT INFO**]

Those are all the questions I have today. [**THANK AND TERMINATE**]

B.6 Non-Participating Trade Partner Interview Guide

To support the process and impact evaluation of the 2022 Xcel Energy Whole Home Efficiency product, members of the TRC evaluation team conducted in-depth telephone interviews with non-participating trade partners. This guide presents the questions covered in the in-depth interviews of trade partners who had never participated or previously participated in the Colorado residential Whole Home Efficiency product.

The evaluation team planned to interview 15-20 trade partners as part of this effort, as shown in Table 20¹². In an attempt to understand various types of barriers to trade partner participation, the evaluation team prioritized speaking with three categories of non-participating trade partners: 1) Trade partners who participated in relevant stand-alone products (HVAC, air sealing and insulation), 2) Trade partners who previously participated in Whole Home Efficiency but did not submit any projects in 2021, and 3) Trade partners who were currently registered with Whole Home Efficiency but had never participated in the product. The population and targets for each stratum is outlined in Table 20.

¹² The evaluation team ultimately spoke with 11 total non-participating trade partners.

Table 20. Non-Participating Trade Partner Target Interviews, By Interview Strata

Trade Partner Type	Strata	Population	Target Interviews
Trade Partners	Participates in Standalone Product	30 ^a	7-8
	Previously Participated	16 ^b	5
	Registered but Never Participated	9 ^c	5
	Total	145	15-20

^a Included the set of top 30 HVAC trade partners doing rebates and beneficial electrification.

^b Population primarily included insulation contractors

^c Evaluation team primarily focused on HVAC contractors

The remainder of the introduction provides the research questions which this guide is designed to address and fielding instructions for the interviewers.

Evaluation Objectives

The objectives for the Colorado Whole Home Efficiency evaluation were to:

- ◆ Understand how best to engage customers and further motivate customers to participate.
- ◆ Identify the sources of the product’s challenges with trade partner engagement.
- ◆ Understand participating customer and trade partner product experiences.
- ◆ Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects.

The trade partner interviews did not address every evaluation objective. For reference, Table 21 provides the evaluation efforts used for each objective.

Table 21. Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Non-Participating Trade Partner Interview Objective
Understand how best to engage customers and further motivate customers to participate.	Process	Participating and near-participating customer interviews, and participating trade partner interviews, peer utility	✓
Identify the sources of the product’s challenges with trade partner engagement.	Process	Participating and nonparticipating trade partner interviews	✓
Explore participating customer and trade partner product experiences.	Process	Participating and near-participating customer interviews, and participating trade partner interviews	✓
Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects	Impact	Participating and near-participating customer interviews, and participating and non-participating trade partner interviews	✓

Table 22 presents the link between each evaluation objective, interview research theme, and interview question.

Table 22. Interview Questions by Evaluation Objective Addressed

Evaluation Objective	Interview Research Theme	Interview Question Number(s)
Understand how best to engage customers and further motivate customers to participate.	Non-/Never-/Previously-participating trade partner perspectives on how engage new customer for the product	B8, C6, D5
	Barriers to participation in the Whole Home Efficiency product: Why trade partners have stopped participating, or signed up and never participated	B1, B4, C1, D1
Identify the sources of the product's challenges with trade partner engagement.	Market-related challenges, industry-specific challenges, challenges related to program design changes that limit or prevent participation	B2, B4, B5, C1, C2, C3, D2, D3
	Challenges to collaboration with other trade partners	B3, B3a, C4
	Awareness and perceptions of Whole Home Efficiency	P1, P2, C1a, D1a
	Opportunities to increase trade partner engagement	B4, B6, C5, C6, D4,
Explore participating customer and trade partner product experiences.	Successful program elements from standalone programs that can provide insights for Whole Home Efficiency, particularly from HVAC contractors	B7
Estimate an overall NTGR, including the major drivers of free-ridership, spillover & market effects	Program impacts on previously participating trade partner decisions to install energy efficient measures; Impacts on business practices	C7-C10b, D6-D9b

Sample Variables

Table 23 includes the sample variables that were used to conduct this interview, as well as descriptions of these variables and potential codes.

Table 23. Sample Variables

Sample Variables	Variable Descriptions
NON_PART	Trade partners who participated in comparable stand-alone products (HVAC) but did not participate in Whole Home Efficiency
PREV_PART	Insulation/Air Sealing trade partners who previously participated in Whole Home Efficiency but did not submit any projects in 2021
NEVER_PART	Primarily HVAC trade partners who were currently registered with Whole Home Efficiency but had never participated

Fielding Instructions

We attempted to schedule interviews via email if email addresses were available. We supplemented email recruiting efforts with telephone calls as needed.

The following fielding guidelines were used for trade partner recruiting and interviews:

- ◆ Attempt to reach each trade partner five times on different days of the week and at different times.
- ◆ Leave messages on the first and fourth attempt.
- ◆ Experienced interviewers should attempt to convert "soft" refusals [e.g., "I'm not interested", immediate hang-ups] at least once.
- ◆ Calling hours are 7 AM to 5 PM MST.
- ◆ Record interviews

Interview Sections

- ◆ **F:** Background & Program Familiarity
- ◆ **P:** Perceptions/Awareness of Whole Home Efficiency
- ◆ **B:** Non-Participating Trade Partner Questions
- ◆ **C:** Previously-Participating Trade Partner Questions
- ◆ **D:** Never-Participating Trade Partner Questions
- ◆ **E:** Closing

Section F: Background and Program Familiarity

Thank you for agreeing to talk with me today. I expect this conversation to take about 30 to 45 minutes. To help me capture your responses accurately, is it okay if I record this call? The recording will be used for my note-taking purposes only. It won't be shared with Xcel Energy. As a reminder, this is the best opportunity to provide your feedback and influence program changes. Additionally, we are offering a \$50 gift card as a thank you for your time and input.

Do you have any questions before I start?

First, I want to take a few minutes to better understand your role and set the stage for the rest of the questions.

F1. How long have you been in your current role? **[IF < 5 YEARS]** What was your previous role?

[PROBE: Owner, Sales Manager, Engineer, Contractor, Field Technician, Project Manager, etc.]

[ASK IF TIME PERMITS]

F2. What Xcel Energy programs have you participated in previously?

Section P: Perceptions/Awareness: Whole Home Efficiency Program

[ASK ALL]

P1. How familiar are you with the Xcel Energy's Whole Home Efficiency program (previously named Home Performance with Energy Star)? **[PROBE:** As you probably recall, this is a program offered by Xcel Energy that provides rebates for energy efficient upgrades made at a customer's home. When the customer makes three upgrades, they receive a bonus rebate. Every customer is required to have an audit completed at their home before they are eligible to participate]

P2. What were your perceptions of the Whole Home Efficiency program when you first heard of the program?

[PROBE] What did you perceive as the value to customers offered through the Whole Home Efficiency Program?

[PROBE] What did you perceive as the value to your business, offered through the Whole Home Efficiency Program?

[PROBE] Have your perceptions of the program changed at all, since you first heard of it?

Section B: Non-Participating Trade Partners

B1. I understand that you participate in the HVAC standalone program through Xcel Energy but do not currently participate in Whole Home Efficiency. Could you tell me what prevents you from participating in Whole Home Efficiency?

B2. Thinking more generally, what challenges do you experience installing multiple energy efficient equipment or projects in homes?

[PROBE] Are there any barriers related specifically to the HVAC industry that prevent you from participating in the Whole Home Efficiency program?

[PROBE] The program has had some difficulty encouraging HVAC contractors to participate in Whole Home Efficiency in the past. What is your perspective on why this might be so?

[PROBE] Have the number of projects you have completed for standalone Xcel Energy rebate programs increased, decreased, or stayed about the same in the past few years? Why do you think that is so?

B3. Do you ever need to coordinate or work with contractors in other specialties to complete projects for your customers?

[IF B3 = YES]

B3a. What challenges do you encounter when coordinating with contractors in other specialties on a project?

[IF P1 = NO/HAS LIMITED AWARENESS OF WHOLE HOME EFFICIENCY]

B4. After hearing the description of the program, does it sound like something you would be interested in participating in the future? Why or why not? [REPEAT DESCRIPTION IF NECESSARY]

[IF P1 = NO/HAS LIMITED AWARENESS OF WHOLE HOME EFFICIENCY]

B5. What challenges could you foresee that may prevent you from participating?

B6. What about the Whole Home Efficiency program would need to change in order for you to pursue rebates through the program?

B7. From your experience participating in other programs with Xcel Energy, what makes a program most successful?

[PROBE] What elements of a rebate program make it easiest for you to participate?

[PROBE] Are there any other elements of your experience with standalone programs that you think Whole Home Efficiency should consider as they improve the program?

B8. In your experience, what have been the most successful strategies for engaging customers in a rebate program?

[PROBE] How can the Whole Home Efficiency program apply these strategies to motivate more customer participation in the program?

Section C: Previous Participants

[ASK IF PREV_PART]

Barriers to Participation

C1. I understand that you previously participated in the Whole Home Efficiency program but did not submit any projects in 2021 or 2022. Could you tell me why you did not participate in Whole Home Efficiency in 2021?

[PROBE] Were there any changes to the program that made it more challenging to participate? If so, what were those changes and why were they challenging? (Removing the requirement for completing an insulation project)

[PROBE] Were there any changes to [insulation/air sealing/HVAC] market that made it more challenging to participate? If so, what were those changes and why were they challenging? For example, jumps in the housing market, increased new construction, etc.

[PROBE] What other elements of the program make it challenging to participate? (Recruiting eligible customers, completing applications, receiving rebates, the audit requirement, program timeline requirements?)

[ASK IF TIME PERMITS]

C1a. What initially motivated you to sign up as a participating trade partner for the Whole Home Efficiency Program?

C2. Are there any barriers related to the insulation/air sealing industry or specialty that prevent you from participating in the program?

[PROBE] The program has seen a decrease in the number of projects submitted by insulation contractors over the past few years. What is your perspective on why that might be so?

[PROBE] Was the program's requirement that the customer complete an audit prior to participating in Whole Home Efficiency ever a barrier to participation for you or your customers? If so, how?

C3. Thinking more generally, what challenges do you experience installing multiple energy efficient equipment or projects in homes?

C4. Have you ever attempted to work or coordinate with another trade partner to help your customer complete multiple projects and earn the bonus rebate?

[IF YES] Did you experience any challenges coordinating with other trade partners?

[IF YES] Would additional support in collaborating with trade partners outside your specialty on Whole Home Efficiency projects motivate you to participate in the program more frequently? What kind of support would be most valuable?

C5. What about the Whole Home Efficiency program would need to change in order for you to pursue rebates through the program in the future?

C6. What should the Whole Home Efficiency program do to better motivate more customer participation in the program?

[PROBE] In your opinion, what do you think would motivate a customer to complete multiple projects at once?

C7. What interactions did you have with the program administrator, CLEAResult when you participated in the program in the past? **[PROBE** for support received from CLEAResult, positive or negative interactions with program administrator, any additional support desired]

[PROBE for enrollment process (training, certification, signing agreement), contractor mentoring after enrollment, on-site visits, QA/QC on jobs completed through the program [note that CLEAResult is only expected to do QC on insulation jobs, not on HVAC jobs]

[ASK C8 IF TRADE PARTNER HAS INTERACTED WITH CLEAResult]

C8. Next, I'd like to ask you about your satisfaction with several elements of your interactions and experience with the program administrator, CLEAResult. Using a scale from 1 to 5, where 1 is "extremely dissatisfied" and 5 is "extremely satisfied", please rate your satisfaction with the following items:

Please use a scale from 1 to 5, where 1 is “extremely dissatisfied” and 5 is “extremely satisfied”, please rate your satisfaction with the following items:

- C8a.** Program administrator’s communication with you
- C8b.** Program administrator’s ability to answer your questions
- C8c.** Program administrator’s knowledge of program rules
- C8d.** Program administrator’s help with rebate applications in progress
- C8e.** Quality of program administrator’s inspections and feedback

Program Influence on Market

Next, I’m going to ask some questions about the type of equipment you sell to customers.

C9. In the past year, did you install multiple residential energy efficiency projects at a customer site without rebates from Xcel Energy?

[IF C9 = YES]

- C9a.** Did the Whole Home Efficiency program influence you to do this in anyway?
- C9b.** Why didn’t you pursue rebates for these projects?

C10. In what ways does the Whole Home Efficiency rebate program impact your business practices, if at all? (i.e., learning about new equipment, availability of equipment, market acceptance of equipment)

[PROBE] Did your previous participation in the Whole Home Efficiency program change any of your business practices?

C11. Do you mention the bonus rebates available through the Whole Home Efficiency program to your customers? Why or why not?

[IF C11 = YES]

C11a. At what point in the sales process do you mention the bonus rebates available through the Whole Home Efficiency program to your customers?

C12. Do you do any work for customers served by another utility? In what regions?

[ASK IF C12 = YES]

- C12a.** About what percent of the equipment you sell in this region is considered energy efficient? [DEFINE what EE means for the trade partner’s specialty]
- C12b.** For about what percent of customers in these regions do you install multiple home efficiency upgrade projects?

Section D: Never-Participating Trade Partner

[ASK IF NEVER_PART]

Barriers to Participation

D1. I understand that you signed up to be a participating trade partner for the Whole Home Efficiency program but have not submitted any projects. Could you tell me why you have not participated in Whole Home Efficiency?

[PROBE] Were there any changes to the program after you signed up that prevented you from participating? If so, what were those changes and why were they challenging?

[PROBE] Were there any changes to your industry's [HVAC] market that prevented you from participating? If so, what were those changes and why were they challenging? For example, jumps in the housing market, increased new construction, etc.

[ASK IF TIME PERMITS]

D1a. What initially motivated you to sign up as a participating trade partner for the Whole Home Efficiency Program?

D2. Are there any barriers related specifically to the HVAC industry or specialty that prevent you from participating in the program?

[PROBE] The program has had some difficulty encouraging HVAC contractors to participate in Whole Home Efficiency in the past. What is your perspective on why this might be so?

[PROBE] Is the program's requirement that the customer complete an audit prior to participating in Whole Home Efficiency a barrier to participation for you or your customers? If so, how?

D3. Thinking more generally, what challenges do you experience installing multiple energy efficient equipment or projects in homes?

D4. What about the Whole Home Efficiency program would need to change in order for you to pursue rebates through the program in the future?

D5. What should the Whole Home Efficiency program do to better motivate more customer participation in the program?

[PROBE] In your opinion, what do you think would motivate a customer to complete multiple projects at once?

Program Influence on Market

Next, I'm going to ask some questions about the type of equipment you sell to customers.

D6. In the past year, did you install multiple projects at a customer site without rebates from Xcel Energy?

[IF D6 = YES]

D6a. Did the Whole Home Efficiency program influence you to do this in anyway?

D7. In what ways does the Whole Home Efficiency rebate program impact your business practices, if at all? (i.e., learning about new equipment, availability of equipment, market acceptance of equipment) Did signing up for the Whole Home Efficiency program change any of your business practices?

D8. Do you mention the bonus rebates available through the Whole Home Efficiency program to your customers? Why or why not?

[IF D8 = YES]

D8a. At what point in the sales process do you mention the bonus rebates available through the Whole Home Efficiency program to your customers?

D9. Do you do any work for customers served by another utility? In what regions?

[ASK IF D9 = YES]

D9a. About what percent of the equipment you sell in this region is considered energy efficient? [DEFINE what EE means for the trade partner's specialty]

D9b. For about what percent of customers in these regions do you install multiple home efficiency upgrade projects?

Section E: Closing

E1. Is there anything we didn't cover that you'd like to mention or discuss about either your experiences with the Whole Home Efficiency program or experiences installing multiple measures at a customer site?

E2. Would it be ok to follow up with email if we have any outstanding questions?

E3. As a thank you for your input, we'd like to send you a \$50 Tango gift card, which is an online card that can be applied to a wide variety of businesses or non-profits of your choice or donate the money to your local United Way in the name of your choice. What would you prefer?

IF TANGO: Let me ask the information we need to email the gift card to the intended recipient—this could be you, personally, or anyone else of your choosing. **[COLLECT CONTACT INFORMATION]**

IF UNITED WAY: What zip code should we use to find your local United Way?

In what name should I donate the \$50?

Those are all the questions I have today. **[THANK AND TERMINATE]**

Appendix C: Full Results

Appendix C contains materials related to data collection full results and findings including peer utility benchmarking memo, staff interview memo, non-participating customer interview results, participating customer interview results, participating trade partner interview results, and non-participating trade partner interview results.

C.1 Peer Utility Benchmarking Memo

Introduction

As part of the TRC evaluation of the Xcel Energy Whole Home Efficiency Product in 2022, TRC conducted secondary research and in-depth interviews with key staff at peer utilities that offer residential “whole home” programs supporting the bundling of home energy efficiency upgrades.¹³ The objective of the peer utility benchmarking research was to understand how peer utilities approached key issues related to implementing whole home programs for residential customers.

The evaluation team’s findings were informed by interviews with eight program managers and staff at five utilities (shown in this memo as Utilities A-E). We selected these utilities because they have comparable territories and programs to the Xcel Energy Whole Home Efficiency product. This allowed the evaluation team to perform an “apples-to-apples” comparison, and to evaluate the set of circumstances (such as regulation and demographics) that impact program plans at peer utilities.

Specifically, the peer utility selection was based on one or some of the following criteria:

- ◆ Comparable program designs (e.g., programs that are part of Home Performance with ENERGY STAR®, or similar programs but with different eligibility criteria)
- ◆ Comparable territories (e.g., geographically located in the southwest United States, similar number of customers, and similar number of small businesses in territory).
- ◆ Other programs known to have best practices or tools Xcel Energy is interested in pursuing.

These interviews generally focused on the same discussion topics being explored in the interviews with Xcel Energy customers and trade partners but emphasized the following research objectives specific to peer benchmarking interviews:

- ◆ **Program Design and Performance Benchmarking:** Understand the overall program design of the peer utilities, including the program eligibility criteria, program performance and recent of planned changes to the programs.
- ◆ **Customer Engagement and Experience:** Understand how other utilities manage customer engagement, including tracking and motivating customer engagement at different phases of the process.

¹³ Most of these programs were “Home Performance with ENERGY STAR®” programs; Xcel Energy’s Whole Home Efficiency program was part of Home Performance with ENERGY STAR until Q1 of 2022.

- ◆ **Trade Partner Engagement and Experience:** Investigate how other utilities assist existing trade partners in becoming product-qualified trade partners and how to keep trade partners actively engaged throughout the process.
- ◆ **Market Growth Opportunities:** Identify where peer program representatives feel there are opportunities for future growth.

The remainder of this memo presents key takeaways, followed by an overview of peer utility benchmarking and detailed results based on each research objective.

Key Takeaways

TRC evaluation team summarized the findings based on interviews conducted in August 2022. Below are the key takeaways from interviews with peer utility representatives regarding their residential whole home programs.

- ◆ **Program Characteristics:** While each peer offered a program with differing implementation methods, eligible measures and incentives offered, there were several common elements across peer program design. Several peer utilities used third-party implementers to manage the program, provide oversight on trade partner activities, and ensure program compliance with regulatory requirements. Additionally, most programs generally required or highly recommended a baseline home energy assessment or audit.
- ◆ **Program Performance:** All five peer utility programs showed energy savings in 2021. Utilities mentioned that quality control and assurance, cost and process efficiency, engaged trade partners and staff, and high levels of awareness and participation drove their programs' success. These strengths help to deliver comprehensive and high-quality residential energy efficiency upgrades with a focus on customer satisfaction and energy savings, while streamlining the process and ensuring the engagement of all stakeholders.
- ◆ **Customer engagement:** Peer utilities use a mix of digital and print marketing customer engagement strategies, including email, social media, direct mail, and bill inserts. Peer utilities found that word-of-mouth communication was the most successful method for initially engaging customers in the program. Peers also felt that personalized outreach techniques, like delivering relevant marketing messaging based on demographics, home characteristics and past product involvement, were also helpful in increasing customer participation.
- ◆ **Trade partner engagement:** Peer whole home programs strive to develop positive relationships with trade partners, improve the quality of trade partner work, and maintain open lines of communication. Challenges affecting trade partner participation and satisfaction included trade partner hesitance to change their business model to align with program requirements and a variable or unpredictable incentives through the pay-for-performance model. Peers also had some difficulty finding and retaining qualified trade partners, describing inconsistencies in trade partner quality. Strategies used by peers to engage trade partners included high-touch quality control, multi-channel education support, frequent communication, and recognition of high-performing trade partners.
- ◆ **Market growth opportunities:** All peer utilities underscored the growing need for a whole home approach to residential energy efficiency across the country, but they focus on variety of growth opportunities with their whole home programs. Controls and automation are priorities for Utility B, while Utility A prioritizes paying attention to grid and customer value. Utility E sees improved marketing and messaging as important for growth. Utility C noted

that the population in their region is growing, and that a challenge will be providing adequate support to the increasing number of low-income customers needing whole home upgrades. Utility C and D are focusing on tackling labor staff shortages by investing in trade partner education and training, and state-level infrastructure improvements.

Peer Benchmarking Overview

This section provides an overview of the peer utility program design, past performance, and recent or planned program changes.

Program Design

All peer programs had a common overarching objective – helping customers identify ways to improve the home’s energy efficiency, while also improving the indoor air quality, comfort, and safety of their homes. Four of the five peer programs in the benchmarking study operate their programs through the Department of Energy’s Home Performance with ENERGY STAR® program framework. The peer programs are administered by utilities in five different states, including three electric utilities and two dual electric and gas utilities. Table 24 outlines background information for each peer utility respondent and their respective residential rebate programs.

Table 24. Program Design Overview

Program Sponsor	Program Name	Census Region	Fuel Type
Utility A	Home Performance with ENERGY STAR®	West	Electric
Utility B	Home Performance with ENERGY STAR®	South	Electric
Utility C	Home Performance with ENERGY STAR®	South	Electric
Utility D	Home Performance with ENERGY STAR®	Midwest	Electric and Gas
Utility E	Home Energy Assessment	Northeast	Electric and Gas

Program Implementation

To better understand peer program applications processes and eligibility requirements, the evaluation team inquired about program eligibility criteria and whether peers have multiple channels for participation through their programs, for example, with or without an audit. Most peer utilities (all except Utility B) utilized third-party implementers to manage their programs. The duties of the implementers across the peer programs were similar, including:

- ◆ Ensuring the customer applications are being processed.
- ◆ Maintaining the trade partner network and providing oversight on all trade partner-related activities.
- ◆ Facilitating communications between the utility’s corporate and the trade allies through a company portal.
- ◆ Ensuring that the program complies with the state regulatory requirements, for example, by providing education on the preferred insulation installation methods to trade partners within the utility’s territory.

- ◆ Assisting with EM&V and filings, by helping the program meet its energy savings goals and delivering the program within budget.

To participate in the program, all utilities require or highly recommend an initial assessment or audit to set the baseline and ensure the accuracy of claimed savings, agree on the project scope, and ensure a high quality of work. Three peers (Utilities C, D, E) did not set a timeline for completing the projects after the assessment, while the assessment expires after five years for Utility A and 180 days for Utility B. Table 25 summarizes the program’s eligibility criteria.

Table 25. Program Eligibility Criteria

Program Sponsor	Program Administrator	Initial Assessment	Completion Timeline	Other Requirement
Utility A	Third-party Implementer	Required	5 years	The prime contractor must find a subcontractor as needed based on the assessment recommendations
Utility B	Internal program staff	Required	180 days	Must complete at least 3 projects to qualify for the program and perform quality assurance on all projects
Utility C	Third-party Implementer	Required	None	Home must be at least 10 years and occupied for at least 12 months, and the customers cannot previously receive weatherization service or participated in the program
Utility D	Third-party Implementer	Recommended	None	Has a recognition system for the participating trade partners based on the projects completed and customer satisfaction
Utility E	Third-party Implementer	Required	None	Instant savings measures are offered during the initial assessment

While these programs are based on the same overall concept of improving the energy efficiency of homes, there are some differences in the specific details of how each program is implemented, and the measures and incentives offered. The program’s overall application process and other key aspects of the program design are further described below.

- ◆ **Utility A:** A customer can either take a survey or call the program hotline to apply for the program and get a list of recommended trade partners. Trade partners typically perform all work, including assessment, sales, upgrades, and in-house quality control. During an audit, a trade partner can recommend measures not covered by the program's rebates. Trade partners are responsible for finding subcontractors and providing cost estimates for

upgrades, even if they cannot perform the work. The implementer will follow up with customers and proactively schedule quality control appointments, a practice that leads to high customer satisfaction. Assessments are valid for 5 years, but trade partners usually sell and complete all recommended upgrades at once.

- ◆ **Utility B:** The utility has offered whole-home and weatherization programs since the early 1990s, before partnering with the Department of Energy in 2004 on the current Home Performance with ENERGY Star® program. Customers are asked to obtain three quotes from participating trade partners to compare before selecting one to perform installations and handle the rebate application. The program staff work closely with participating trade partners from throughout the process of participating. Some trade partners can handle both audits and installations or sub-contract specialized work when necessary. The primary contractor is responsible for selecting subcontractors, ensuring quality work, and meeting the utility's standards. An independent vendor is hired for random quality control checks to ensure projects meet program requirements.
- ◆ **Utility C:** This utility's Home Performance program began in 2015. The program connects customers with participating, BPI-certified trade partners to install energy-saving measures. Trade partners conduct a required audit, and then not only suggest measures within the program but also other options outside of it. If customers are interested in measures outside the trade partner's expertise, the trade partner helps link them to the program implementer for further assistance and directs them to the energy efficiency website for educational resources.
- ◆ **Utility D:** The peer program was launched in 2011 and connects customers with around 200 trade partners for comprehensive assessments. The utility has 5 account managers from different utility residential programs who share the same trade partner network. Trade partners have a gold, silver, and bronze badging system indicating the number of completed projects and customer satisfaction to help customers select pre-qualified trade partners.
- ◆ **Utility E:** The program has a statewide helpline that routes customers to the appropriate service based on location and need. The lead contractor or third-party implementer manages the weatherization process by allocating recommendations from the required assessment to participating trade partners as needed. During the energy assessment, the utility offers direct install options, such as installing thermostats, faucet aerators, showerheads, and providing smart power strips and light bulbs. The trade partner network carries out work at a fixed price with standardized procedures, costs, and installation methods. Customers can also choose and schedule their own trade partners for upgrades, with payment made directly by the implementer and a copay collected from customers by the utility. While there's no deadline for project completion, the lead vendor must renew the contract with the customer after 30 days (if necessary) and ensure there are no changes to the home after one year from the last assessment.

Incentive Structure

The peer programs offer incentives to motivate homeowners to improve energy efficiency in their homes, including cash incentives, bill credits, or cost reductions on upgrades. The rebate amount varies based on budget and savings per measure. When the utility wants to prioritize a particular measure, they typically offer higher incentives. The types of incentives are summarized in Table 26 and further discussed as follows.

Table 26. Incentive Structure

Program Sponsor	Measure	Incentive Type	Bonus Incentive
Utility A	Envelope (e.g., air and duct sealing, insulation, and window/door replacement), HVAC system improvement, and controls (e.g., smart thermostat, connected water heater control)	Prescriptive	None
Utility B	Envelope (e.g., air and duct sealing, insulation, and solar screens on single pane windows) and HVAC system improvement	Prescriptive	None
Utility C	Envelope (e.g., air and duct sealing, insulation), HVAC system improvement, and in-unit instant savings (e.g., LED lights, advanced power strips, low-flow shower heads, and faucet aerators)	Prescriptive	The program is a no-cost service to the customers
Utility D	Envelope (e.g., air and duct sealing, insulation, and window/door replacement) and HVAC system improvement	Prescriptive	Bonus rebate for using local, state-made products, and tiered bonus rebate for completing multiple measures
Utility E	Envelope (e.g., air and duct sealing, insulation), HVAC system improvement, and in-unit instant savings (e.g., LED lights, advanced power strips, low-flow shower heads, and faucet aerators)	Prescriptive and Performance	The program is a no-cost service to the customers and provides rebates for high efficiency appliances

- ◆ All utilities offer prescriptive rebates, which are incentives calculated as fixed amounts or a percentage of the upgrade cost. Utility E also provides performance-based rebates that are based on estimated energy savings.
- ◆ Two utilities (Utilities C and E) offer no-cost service to customers and provide incentives directly to trade partners for eligible upgrades. Utility C’s program is part of the state’s public service commission order for all electric investor-owned utilities and natural gas utilities to provide certain weatherization measures to energy inefficient homes at no cost. Utility E offers assessment and most home improvement measures at no-cost, while rebates are available for other high efficiency heating and cooling equipment, hot water systems, lighting, appliances, and smart thermostats.
- ◆ The rebates offered by Utility D are tiered, with the amount increasing as customers complete additional measures, up to a maximum rebate of \$3,750. The rebates are grouped into three tiers: 1 to 3 measures, 3 to 5 measures, and 5 to 7 measures.

- ◆ Three peers reported that their whole home program incentives do not overlap with other standalone programs in their portfolios (Utilities A, C, and E). These utilities do not provide standalone rebates for any measure offered in the Home Performance programs.
- ◆ Some measures offered in Utilities B and D's Home Performance with ENERGY STAR® programs, including window replacement, smart thermostats, and HVAC system improvements, are also offered in the utility's standalone programs, with similar or higher rebates amounts for purchase and installation through their whole home program. However, not all measures in Utility B's Home Performance with ENERGY STAR® program, such as insulation, have standalone programs. Utility D offers flexibility for customers to choose which program to participate in based on their need or type and level of improvements. Their Home Performance program offers comprehensive improvements that cost significantly more than the standalone programs but offers higher rebates to get customers to consider participating in Home Performance program.
- ◆ Additionally, Utility E provides a separate weatherization incentive for moderate-income customers (defined as 61-80% of the state median income), offering incentives of up to \$7,000 for some types of remediation work, like for existing homes containing asbestos material.

Program Performance

The retrospective Net-to-Gross Ratio for the overall program in 2021 reported by four out of five utilities ranged from 0.9 to 1.0, as shown in Table 27. Higher ratios are likely driven by the success of customer and trade partner engagement efforts as described in more detail in the later sections.

Table 27. Peer Program Performance in 2021

Program Sponsor	Projects Completed	Energy Saving Goal		NTGR	Actual Energy Saving		Cost Effectiveness Test	Program Budget Details
		MWh	Mcf		MWh	Mcf		
Utility A	156,352 units of combined energy saving devices and measures	28,091	N/A	1 (Stipulated)	20,483 (Gross)	N/A	SCT: 1.8	Program cost: \$4,002,797 Rebates & incentives: \$2,797,326 (70%)
Utility B	566 homes	1,002	N/A	Not Provided	N/A	N/A	TRC: 1.0 SCT: 1.1 PCT: 1.4	Program cost: \$1,780,206 Rebates: \$1,295,226 (73%)
Utility C	1,764 homes	6,487	N/A	0.94	5,713 (Net)	N/A	TRC: 2.8	Program actual: \$2,328,353 Incentives actual: \$1,527,925 (66%)
Utility D	1,718 projects	214	22,547	0.90 (Stipulated)	342 (Verified Net)	39,211 (Verified Net)	Electric TRC: 0.76 UCT: 1.36 Gas TRC: 0.57 UCT: 1.56	Program actual: \$1,853,642
Utility E	Electric: 1,309 participants Gas: 13,032 participants	24,323	287,354	Not Provided	19,894	332,862	Not Provided	Program actual, electric: \$58,044,620 Program actual, gas: \$68,801,218

- ◆ Generally, the program participation in peer programs slowed down during the pandemic, but three utilities indicated that trade partners' active marketing and attention to special health protocols were critical in keeping the program alive. Utility A mentioned that the participation was coming back in 2022 to around 1,000 – 1,200 participants.
- ◆ Peer utilities suggested several strategies they use to enhance the cost-effectiveness of the program, including:
 - ◇ Holding frequent meetings with all trade partners to give program updates and gather feedback on proposed changes. This helps streamline the overall program and reduce potential costs associated with errors or non-compliance.
 - ◇ Exploring highly efficient equipment which can help to maximize the energy savings and cost-effectiveness of the program, leading to a higher TRC score. For example, one utility is exploring and promoting heat pump water heaters through their program.
 - ◇ Switching to a midstream approach for equipment and new technologies that cuts processing fees for implementation trade partners.
 - ◇ Procuring bulk prices for items like thermostats, showerheads, and aerators based on total program volume rather than individual company procurement. The Utility uses a

fixed price approach to control costs for weatherization measures, and the program releases a “request for quotes” at regular intervals to request pricing from distributors and adjust procurement prices as needed.

- ◇ Optimizing the customer incentives among other program costs, such as labor, marketing, and direct costs, to ensure customers receive as much of the budget as possible. Utility D's program budget typically directs 70% of budget dollars to customers as incentives.
- ◇ Implementing a collaborative approach for marketing with other participating utilities. For example, Utility D's program has two FTEs dedicated to trade partner marketing and three FTEs for customer marketing. Across the related programs, there are about 10 staff that share their time with another participating utility to avoid overspending on costs.

Program Changes

Peer whole home programs described making a variety of recent changes and are considering a variety of changes in the near future including: Covid19-related changes, trade partner evaluation and recognition, assessment requirements and incentives, inclusion of new measures, expansion of home eligibility, new marketing plans, and new payment methods.

- ◆ **Covid19-related Changes:** Utility program operation and participation were generally slowed down and faced challenges due to the pandemic.
 - ◇ Utility A saw participation decrease during the pandemic, but it picked back up in 2022.
 - ◇ Utility B allowed virtual inspections during the pandemic but returned to in-person inspections in 2022, with project completion time extending from 60 days to 180 days due to pandemic-related issues.
 - ◇ Utility C's participation was not significantly affected, but the growth of the program was limited. The utility plans to continue using virtual assessment tools that were helpful during the pandemic to maintain minimal physical contact and improve efficiency.
- ◆ **Trade Partner Evaluation and Recognition:**
 - ◇ Utility A engages trade partners through recognition of high performers. In 2022, they began attaching the recognition to financial rewards. The program evaluates the participating trade partners based on criteria related to compliance, quality, and customers' satisfaction. The utility then ranks trade partners based on their impact on customers to identify top performers, as well as trade partners requiring extra support. Prior to 2022, the top five trade partners were honored with annual recognition such as a distinctive marketing logo and enhanced media coverage. In 2022, the evaluations will be factored into final scores to determine the 10 top performing trade partners, who receive additional financial rewards ranging from \$15,000 to \$20,000.
- ◆ **Assessment Requirements and Incentives:**
 - ◇ Utility E's 2022-2024 plan included a new approach that allows an assessment to be completed after weatherization work. Trade partners can carry out the weatherization and submit data for approval to the lead vendor prior to assessment.

◆ **Inclusion of New Measures:**

- ◆ Utility A is transitioning its program from conventional energy efficiency upgrades to focus on emerging technology, by adding measures related to on peak demand management, such as smart thermostats, home energy monitors, cooling controls, and smart water heater controls.
- ◆ Utility B plans to revamp its program by introducing new measures, reassessing rebate levels, and incorporating more demand response devices. The program is considering a standalone rebate for solar screens for the 2023 fiscal year, but they are still finalizing the rebate levels.
- ◆ Utility E is working on allowing certain alternative materials, that typically would not qualify for a rebate, to be eligible for custom incentives through the program. For example, limited use of spray foam will be allowed for air sealing work, which would otherwise not be covered through the program for larger application.

- ◆ **Expanding Home Eligibility:** Currently, only homes 10 years and older are eligible for Utility B's program, but they aim to increase participation by also considering including newer construction. The changes are expected to take effect within three to five years and intend to revive and enhance the long-running program by including new construction.

◆ **New Marketing Plans:**

- ◆ Utility B plans to conduct focus groups and explore different marketing strategies in the next fiscal year to gather customer and trade partner feedback and assess marketing effectiveness. The utility is also exploring new ideas such as educational videos included on their website.
- ◆ Utility D has adopted a new product lifecycle management model in the past several months, which provides information to improve internal marketing. The model promotes collaboration across multiple program teams by giving information on their target audience, developing more effective messaging, and optimizing its product offerings over time to meet changing customer needs and market conditions.

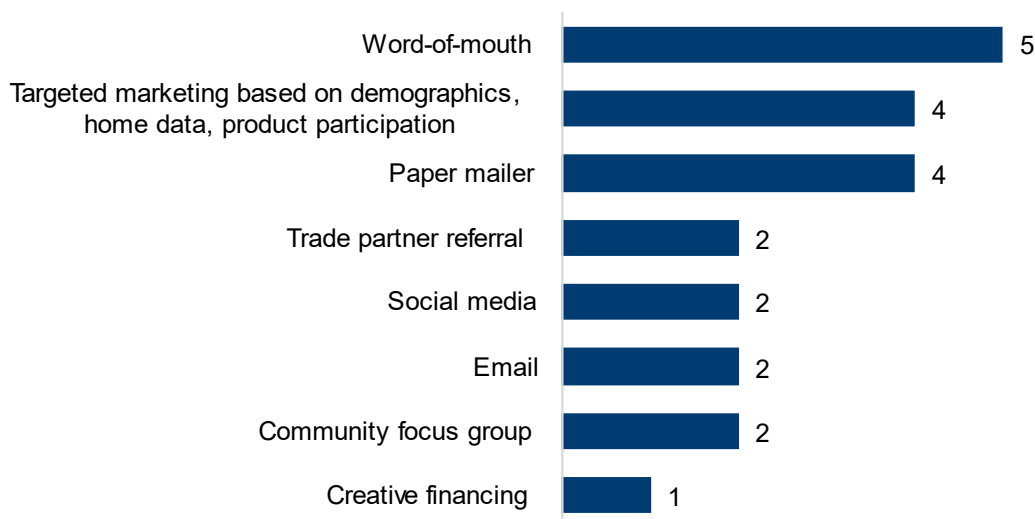
- ◆ **New Payment Method:** Utility D plans to test a new payment option that enables customers to receive a credit on their utility bill instead of a paper check. The utility is also transitioning from a downstream marketing approach to a midstream approach for many products, offering instant rebates at the point of purchase.

Customer Engagement Strategies

Overall, the peer benchmarking findings emphasized the importance of using multiple channels to promote whole home programs. All peer utilities reported using a combination of digital (such as email and social media) and print marketing (such as direct mail, bill inserts, news sources, and yard signs/door hangers) to market their products and engage customers. Peer utilities stated that word-of-mouth communication was the most successful method for promoting their products. This mainly involved active conversations among trade partners and customers about the program incentives and recommendations from satisfied customers about the program offerings to potential customers. Additionally, peer utilities emphasized the importance of targeting and personalizing their marketing efforts to increase customer participation. Four utilities used personalization techniques targeting demographics, home characteristics, and past product involvement. One used email marketing combined with other residential programs

within the utility to increase email open rates. Another utilized internal data analytics to send emails to customers who have a higher likelihood of participating, such as those who have had an energy audit. The reported marketing channels are summarized in Figure 5. Reported Marketing Channels by Peer Utilities.

Figure 5. Reported Marketing Channels by Peer Utilities



More details of each peer utility's engagement strategies are described below.

- ◆ **Utility A** primarily relies on word-of-mouth promotion and trade partner referrals from other customers as the most successful channels for customer engagement. They suspended marketing during the pandemic but recently restarted with a targeted marketing campaign through direct mail and social media. Customers can sign up for the program by completing a survey or calling the program hotline, and 30% of those who initially engage typically go on to participate. Utility A also has a customer portal for the program, which helps the customer understand the steps within the process. They use data analytics to determine who is most likely to participate and reach out based on this information.
- ◆ **Utility B** has a marketing department with a set budget for each program and uses various media for marketing, including digital ads, radio, and paper mailers. They also do in-person events with trade partners and use data analytics to reach out to homes with a certain level of Energy Conservation Audit and Disclosure (ECAD) process. The peer stated that their most successful channels are conversations between trade partners and customers and promoting the program through the website.
- ◆ **Utility C** relies on third-party implementers for marketing and their effective channels are the website, social media, email outreach, and educational videos. They have nine active trade partners, with two high performers taking the majority of projects. There is a waitlist and delay in participation. An independent evaluator is used for quality assurance and quality control.
- ◆ **Utility D** pays trade partners a portion of their marketing costs, to drive participation through the trade partner, and also has a budget for internal marketing. The most successful strategy the peer employs is to send emails co-marketing their program with other similar programs. This co-marketing strategy resulted in a 35% increase in open rates and a higher

percentage in click-through to the trade partner website. The peer noted that Google AdWords had also been successful but was underutilized as customers tend to call trade partners directly for measures such as HVAC.

- ◆ **Utility E** has a dedicated marketing team and utilizes a range of marketing strategies to promote its programs, including social media posts, internal marketing, and direct mail campaigns. They report that one of the most successful marketing efforts was a targeted direct mail campaign aimed at homes with no insulation. They felt that their customers most commonly heard about the program through word-of-mouth communication. They focus on personalizing marketing messages by segmenting customers and delivering the most relevant communications. The peer uses community focus groups to spread the message of energy efficiency. Direct marketing has been effective, with most requests coming from renters for instant saving measures. However, their biggest marketing challenge has been engaging multifamily building owners in the program for more substantial energy efficiency improvements, such as weatherization and mechanical systems upgrades.

Trade Partner Engagement & Experience

Peer utilities emphasized the significance of maintaining positive relationships with trade partners by providing support in maintaining and enhancing their quality of work and keeping open lines of communication to provide updates on the program and receive feedback. This section further details the barriers to trade partner involvement described by peers and tactics to better engage them in the program.

Barriers Affecting Participation and Satisfaction

Peer utilities described three key barriers related to trade partner participation, including trade partner resistance to changing their business model, finding and retaining qualified trade partners, and inconsistent trade partner quality.

- ◆ **Trade Partner resistance to changing their business model.**
 - ◇ Utility B faces the challenge of innovating while also getting buy-in from trade partners. Some trade partners are willing to adopt their business model to align with the program's design, while others are not. The program focuses developing system performance beyond just energy efficiency measure installation, which might be outside of a trade partner's typical work. For example, the program looks at the customer's overall duct system and may recommend more significant modifications to improve system performance. Trade partners who are encouraged to adapt their business model are able to take on larger project with higher margin work.
 - ◇ Utility E has identified concerns from independent installation trade partners regarding allocation of work and balancing work within and outside of the program. As more trade partners participate, project allocation becomes spread between a larger pool of trade partners, which is concerning to some trade partners who rely heavily on the program to support their businesses. The utility encourages trade partners to bring in additional projects through the program to level things out by increasing the number of projects being allocated.
- ◆ **Finding and retaining qualified trade partners**
 - ◇ Utility B has experienced poor communication within some of their trade partners, which they feel is due to high turnover rates in the industry, requiring regular training for new hires. As a result, the utility has stepped in to provide training to actively fill the gap left

and support trade partners who struggle to train new staff to the standards of the program.

- ◇ Utility C faced challenges finding BPI-certified trade partners, particularly in rural areas where some trade partners have left for job opportunities in other areas. Once trade partners become certified, they struggle to retain crews and train new hires due to the strict BPI requirements. Trade partners also face additional uncertainty about profitability when conducting assessments in rural areas because customers are often difficult to reach and located long distances away. When the trade partner reaches the house, they have limited knowledge about the home and potential home improvement projects, and there is risk that profit might not be significant – while the costs and time required to get to the customer are significant. and the need for long-distance travel to reach customers.
- ◇ Utility E’s lead trade partners experienced a labor shortage, which resulted in several years of difficulty in hiring subcontractors, such as electricians, HVAC technicians, and plumbers to support safe installation upgrades.

◆ **Inconsistent trade partner quality**

- ◇ Utility B is committed to conducting quality checks on 100% of participating projects to ensure high quality installation work and are curious about the success of other utilities that only conduct quality control on select projects. The utility had trouble implementing virtual quality checks during the pandemic, because they felt that some trade partners only showed what they wanted to be seen.
- ◇ Utility E's program for multi-family complexes is split between two lead vendors or implementers based on territory. As the incentives are paid to the trade partners using a pay-for-performance approach, some trade partners are frustrated about different results between the two vendors that leads to differing incentives. To address this, the program team is currently working on a checklist and having internal engineering team review calculations to make the process more consistent.

Program Engagement Strategies

Peer programs have strong relationships with their trade partner network, with trade partners showing a consistent level of interest in participating. To ensure the success of engagement and participation, programs employ the following strategies:

- ◆ **High Touch Quality Control:** Peer utilities often described a focus on strict quality control, with zero tolerance for poorly performing trade partners. Utility A maintains a small number of trusted trade partners (Recently reduced from 150 to 35) and rarely experiences failed inspections. Strong customer service and referrals among trade partners are seen as important factors for program success.
- ◆ **Multi-Channel Education and Support:** To keep up with industry turnover, all peer utilities offer ongoing education support, such as 1-on-1 training, seminars, handbooks, process checklists, and recorded videos. Program staff holds regular meetings and new trade partner orientation, with field services staff and coordinators also offering education. Utility A holds weekly free training sessions for trade partners.
- ◆ **Consistent, Close Communication:** Third-party implementers work closely with trade partners, supporting their participation and adherence to utility and program policies. Program implementers proactively approach trade partners to offer training and support. Utility C uses an electronic trade partner portal for project data submission and provides energy assessment reports to streamline the data gathering process.

- ◆ **Program Advertising and Trade Partner Recognition:** Utility B promotes their programs by participating in trade partners organizations, such as the Air Conditioning Contractor Association (ACCA). Utility D uses a badging system and holds an annual energy and excellence award event to recognize top trade partners. Trade partners who receive Department of Energy awards are also promoted on the utility website.

Market Growth Opportunities

This section discusses findings about peer program challenges, strengths, and growth opportunities for residential whole home programs.

Program Challenges

The peer utilities cited consistent and recent concerns that can be categorized into three program challenges, including rising cost of supplies and labor shortages, coordination challenges, and customer perception.

- ◆ **Rising Cost of Supplies and Labor Shortages:** Utility B is concerned with balancing the increase market rate of equipment while keeping projects cost-effective. The engineering team is currently assessing whether rebate levels are attractive enough while still maintaining cost-effectiveness. Utility D also expressed concerns about the availability and affordability of equipment, as well as shortages in labor staff. Similarly, Utility C is seeking new, quality trade partners throughout its territory to fill gaps as the current number of trade partners is not sufficient to support the demand for whole home projects through their program.
- ◆ **Coordination Challenges:** Utility E's program is operated across the state, requiring coordination with other sponsors, which can make it difficult to make changes. The goal is to provide a consistent experience for all customers, but this requires a lot of resources for communication between sponsors and vendors.
- ◆ **Customer Perception:** Some customers may have misconceptions about the value of energy efficiency home upgrades. Utility A mentioned that it can be difficult to convince customers to invest in improvements, like attic insulation, as it is something they cannot see. To overcome this, the limited income program is targeting the population that would benefit the most and determining which types of income and services are best suited to these customers. The challenge is to educate customers on the benefits of weatherization, such as comfort and reduced energy bills, even though these upgrades may not be visually "flashy." Peer utilities report continuously assessing their messaging strategy to focus on the simple and tangible benefits of upgrades for customers, such as "putting a sweater on your house".

Program Strengths

Common program strengths described by peer utilities include quality control and assurance, efficiency in cost and processes, highly engaged trade partners and staff, and increasing awareness and participation.

- ◆ **Quality control and assurance:** Utility A has a zero-tolerance policy for poor workmanship and quality issues. However, they provide substantial support to trade partners to rectify any issues that may arise. This helps to maintain the quality of work and ensure customer satisfaction. Utility B places a strong emphasis on delivering comprehensive projects with a focus on high-quality workmanship. They aim to provide customers with end-to-end solutions that are comprehensive, ensuring they receive the best possible results. Utility D is

committed to being a good steward of its customers and maximizing the opportunities for energy savings. They ensure that all projects are compliant with standards and provide a solid product line.

- ◆ **Cost and process efficiency:** Utility A prioritizes cost-effectiveness, making an effort to spend as little money as possible while still maintaining high-quality work. They rely on the skills and expertise of good trade partners to deliver efficient and cost-effective projects. Utility C cited that their no-cost program is significant for serving their income-challenged customer base in certain areas, especially given the rising energy and utility bills. Utility E provides a large amount of coordination for its customers, streamlining the complex process of deciding on and completing energy efficiency home projects. For example, this utility simplifies the process for customers by offering a fuel-neutral program, allowing customers to choose improvements from gas, electric, or a combination of both energy sources without applying for separate programs. This leads to a quick turnaround time between application and rebate delivery, which speaks to the effort the staff put into maintaining an efficient program.
- ◆ **Highly engaged trade partners and staff:** Utility B values innovation and engaged trade partners, balancing benefits for all stakeholders by delivering energy savings, improved indoor air quality, and safety for customers, while helping trade partners promote their businesses, and supporting the utility's goal of reliable and sustainable energy. Utility C values trade partners with good customer service and works hard to ensure that their trade partners are equipped to provide the best possible service to their customers.

Growth Opportunities

Peers also provided insight into growth opportunities they are aware of or considering for their programs.

- ◆ **Control and Automation:** Utility B has focused on supporting new technologies and techniques for controlling energy-use behavior and automation for the past three to four years. The program staff is interested in implementing more innovative elements into the program but feel that trade partners are somewhat resistant to change. Their challenge has been maintaining their viability while implementing innovative strategies and getting buy-in for the vision by trade partners. Utility A believes the program must pay attention to grid and customer value to ensure reliable energy supply to the grid, as well as economic and environmental sustainability, while also providing benefits to customers. For their whole home program, this involves introducing new measures and focusing on controlling cycle times of ACs during peak periods.
- ◆ **Customer and Trade Partner Education:** Utility E stated that improved marketing and messaging will be important for future program growth. Utility D has received federal funding that they will put towards trade partner training and education.
- ◆ **Growing Population:** With a growing population and lots of new construction, Utility C expects to see increased participation. Marketing efforts have successfully improved customer awareness of energy efficiency strategies, resulting in increased savings every year since 2011.
- ◆ **Labor Staff Shortages:** Utility C mentioned finding BPI certified, quality trade allies will be important for expected growth in participation. This aligns with Utility D's focus on tackling labor staff shortages. Utility D will focus on utilizing federal funding for trade partner education, training, and growth across different segments.

C.2 Staff Interview Memo

To support the 2022 impact and process evaluation of the Xcel Energy Whole Home Efficiency Product (referred to as the Whole Home product), the TRC evaluation team conducted telephone interviews with key staff managing and implementing the Xcel Energy Whole Home Product. The interview objectives were to collect staff feedback on product experiences and evaluation priorities. Members of the TRC evaluation team interviewed the following key staff managing and implementing the product:

- ◆ Current and Former Product Managers
- ◆ Team Lead
- ◆ Trade Relations Manager
- ◆ Product Engineer
- ◆ Product Implementer – Quality Assurance Manager/Field Operations
- ◆ Product Implementer – Associate Program Manager

This memo contains our summary of the key takeaways, an overview of the Xcel Energy Whole Home product, an inventory of the Product's current strengths and barriers, and feedback from staff on evaluation priorities.

Key Takeaways

Below are key takeaways from staff experiences with the Whole Home Product. These key takeaways provide a summary of the evaluation context and feedback received during the kick-off meeting and subsequent staff interviews.

- ◆ Despite changes made to the Whole Home product in the past several years to address declining participation, the product experienced its lowest participation rates in 2021. A goal of this evaluation is to identify opportunities to improve product design and implementation in order to encourage both trade partners and customers to increase their product participation in 2022.
- ◆ Product staff anticipate that recent and ongoing changes to the product will increase the product's success. The product's strengths - including the bonus rebate, the "whole-home" approach, and the high-touch role of the implementer - drive participation currently, but recent changes that offer more flexibility and options for customers are expected to increase participation.
- ◆ Trade partners may not fully understand how to participate in the product or their role in promoting the product to customers. Ensuring trade partners are well-informed of the latest updates on the Whole Home product through education and marketing support could increase awareness among customers and help motivate them to participate.
- ◆ The product can require collaboration between different types of trade partners to complete projects and submit rebate applications, which can be difficult to encourage and facilitate. Customers must complete three improvement projects in order to qualify for the bonus rebate, which often requires that the customers work with trade partners of

different specialties (e.g., insulation contractors and HVAC contractors). Staff note that there currently is minimal collaboration between the various types of trade partners. The implementer supports customers by helping them select projects identified through their audit and identify the appropriate trade partners for their project, but customers may also complete an audit through an independent audit provider (not through the implementer). In these cases, customers could be required to do additional work to connect with the appropriate trade partners for their projects because they do not have support from the implementer. Staff feel there could be an opportunity to streamline the process by incentivizing collaborative efforts among trade partners.

- ◆ The audit pre-requisite can be a barrier to participation, particularly when the customer is installing program-eligible equipment due to burnout or failure of old equipment. The customer may not be able to delay the equipment installation to have an audit conducted and register for the program. This also limits participation by some trade partners, such as HVAC specialties, who are often involved in emergency equipment replacements.
- ◆ Product staff are interested in better understanding trade partner and customers perceptions of the benefits offered through the Whole Home product. Changes to the product, the Covid-19 pandemic, and product pre-requisites create barriers that may have contributed to declining participation in recent years. Product staff would like to understand whether the rebates and other benefits offered through the product can overcome these barriers and increase participation.

Product Overview

The following section presents the evaluation team's understanding of the product based on staff interviews and a review of available product documentation. It presents the product's goals and objectives, activities implemented through the product, recent and notable changes made to the product, and resources staff rely on to implement the product.

Goals & Objectives

Xcel Energy staff identified the following goals and objectives for the product in 2022:

- ◆ **Increase product participation** – After several years of declining participation, the Whole Home product experienced its lowest participation rates in 2021. Staff consistently reported that the key goal of this evaluation was to understand the barriers driving low product participation rates and identify opportunities to encourage both trade partners and customers to increase their participation in the product.
- ◆ **Improve energy efficiency of homes and contribute to beneficial electrification** – The Whole Home product aims to drive the residential housing market to be more energy-efficient and help Xcel Energy provide beneficial electrification opportunities to their customers.
- ◆ **Contribute to Xcel Energy's energy-saving targets** – A goal for 2022 is to identify what elements of the product need to change to meet the product's energy savings targets.
- ◆ **Improve the relationship between the product and participants** – The product aims to strengthen relationships between the product, and the customers and trader partners who participate. Staff highlighted several avenues to do so, including by streamlining the

process for participation and more effectively communicating the benefits afforded to participants.

The 2021 Residential Whole Home product had an energy savings goal of 466,836 kWh. Due to low participation in 2021, the product did not reach its planned goals. Table 28. Whole Home Efficiency Product Net Energy Savings Goals & Product Budgets presents the 2021 achievements and its achievements compared to the planned goal.

Table 28. Whole Home Efficiency Product Net Energy Savings Goals & Product Budgets

Source	Participants	Net kW (% of Goal)	Net kWh (% of Goal)	Net Dth (% of Goal)	Budget (% of Goal)	Net Benefits
Electric	7*	4.177 (2%)	2,258 (0.48%)	--	\$68,092 (34%)	-\$71,820
Gas	9*	--	--	317.5 (0.32%)	\$41,282.84 (22%)	-\$41,902.83

* There were 9 total participants in the product in 2021. Seven participants were both electric and gas, and two were gas only.

Product Activities

The Whole Home product supports Xcel Energy residential customers in identifying ways to save on energy costs while maintaining or improving the comfort of their homes. The product provides incentives for energy efficient home upgrades completed by trade partners who are registered participants in the Whole Home product.

To be eligible for Whole Home product, the customer must first complete an audit through a Home Energy Squad Plus visit or find a qualified, participating trade partner to complete a Home Energy Audit with Blower Door and/or with Infrared. Based on the results of their audit, customers can then work with an energy advisor to identify Whole Home rebate-eligible projects.

There are two avenues by which customers may initially engage with the product after completing an audit: (1) By submitting an online application through the product website or (2) Calling the product team to sign up. Customers then work with the implementer to identify qualifying projects and to connect with product-eligible trade partners to complete their projects. The implementer receives a notification when the improvements are completed, at which point they may reach out to the homeowner for a possible visit for quality control. Xcel Energy is currently developing a third option for customers to engage with the product by scheduling an audit through the online marketplace provider.

Customers receive standard rebates (that align with rebate amounts for stand-alone products) for each of their projects, and once they complete three, receive a bonus rebate of 10% of the total rebated amount. All three of the improvement projects must be completed within two years of the customer having completed their audit. In addition to incentives to customers for completing projects, a separate incentive is also provided to trade partners who complete projects through the Whole Home product.

The staff reported that the Whole Home product is currently a reactive product with minimal marketing to proactively promote the product to customers. In the past, the implementer conducted email marketing for the product with customers who had completed an audit through

Home Energy Squad (Home Energy Squad audits are also conducted by the implementer). The implementer indicated that there is currently no marketing budget for the product, so this type of marketing has not occurred for the past several years.

Product Changes

Xcel Energy has made several changes to the product in the past two years:

- ◆ Until 2019, Xcel Energy required customers to complete an insulation or air sealing project to be eligible for participation in Whole Home. Customers no longer have to include insulation as one of their three Whole Home measures. This requirement was removed in order to give the homeowner more flexibility in their choice for eligible upgrades. The change coincided with a drop-off in the number of participating insulation contractors, who some product staff felt may have been frustrated with what they perceived as a shift away from insulation as a priority.
- ◆ In the past two years, the product has added several new measures to the product, including boilers, indirect water heaters, clothes washers and dryers, and cold climate heat pumps.
- ◆ In 2022, the name of the product changed from “Home Performance with ENERGY STAR” to “Whole Home Efficiency”, due to changing requirements with the Home Performance program – complying with which Xcel Energy felt would be a detriment to the product. While the product is no longer directly affiliated with Home Performance with ENERGY STAR, it still requires all measures to meet ENERGY STAR’s or the Air Conditioning, Heating & Refrigeration Institute (AHRI)’s¹⁴ ratings for efficiency.
- ◆ The Whole Home product is considering implementing a pay-for-performance model for insulation measures based on baseline R values. Incentives for insulation would be determined based on the customers’ pre- and post-improvement r values, rather than a prescriptive incentive based on the cost of materials and labor. If implemented, this would be the only measure that did not align with standard incentives in other stand-alone products.

Resources

Product staff rely on the following resources to implement the product.

- ◆ Product staff use Salesforce to track aggregated customer savings.
- ◆ All product information is managed by the Xcel Product Team that oversees operations for Whole Home.
- ◆ Implementation of the product is carried out by a third-party implementer, which includes a dedicated product manager and quality assurance manager. Additionally, the implementer conducts the Home Energy Squad Plus audits that are necessary for product participation (Home Energy Audits are conducted by Xcel Energy-verified trade partners).

Product Strengths & Challenges

During interviews, staff identified the following strengths and challenges related to implementing the Whole Home product in 2022. Overarching strengths include factors that product staff

¹⁴ Air Conditioning, Heating & Refrigeration Institute (AHRI): ahrinet.org

identified as supporting the success of the product; challenges include factors that product staff identified as preventing the product from reaching its goals.

Strengths

- ◆ **Rebates** – Product staff indicated that the rebates that are offered to both trade partners and customers for completing improvement projects were a strength of the product. The bonus rebate for customers who implement three or more improvements was particularly expected to encourage participation.
- ◆ **“Whole Home” approach** – The whole home approach offers an opportunity for customers to assess their homes comprehensively, which Xcel Energy staff view as the optimal approach when making a home more efficient.
- ◆ **Implementer involvement** – The implementer’s role in the Whole Home product’s design provides an additional level of premium, customized service to customers through the energy advisor services and through quality control visits. This special attention to detail that sets this product apart by encouraging customers to review improvement plans, make an effective selection and then receive a follow-up quality control inspection (10% of projects are intended to receive a quality control inspection).
- ◆ **Changes to product design** – Xcel Energy expected that the changes made within the last few years that offer more flexibility and option for the customer will improve the product’s success.

Challenges

- ◆ **Limited customer participation** – The Whole Home product fell short of achieving its participation goals for the 2021 product year, with only nine participating customers. This was the lowest participation rate since the product was launched.
- ◆ **COVID-19 impact on supply chain and physical audit** – Staff felt that homeowners were hesitant to allow walk-in audits on their property, especially during the COVID-19 pandemic. Additionally, the pandemic has impacted the supply chain with shipping issues of overseas products. Product staff reported that sourcing heat pump water heaters and smart water heaters had been particularly difficult.
- ◆ **Role ambiguity with implementer** – The implementer expressed some confusion regarding the goals of the product (e.g., to increase customer knowledge, to increase participation, etc.) and their responsibilities for promoting the product to the customers, (e.g., during or after the audit).
- ◆ **Lack of proactive marketing** – Product staff reported that there was currently little to no proactive marketing effort for the product and no marketing budget. In the past, the implementer sent email promotions for the product to pre-qualified customers who had completed a Home Energy Squad visit, but this is not happening currently. The implementer felt there could be simple ways to promote the product to customers, like requiring or incentivizing auditors to promote the product or including QR codes/links to sign up for the Whole Home product in audit reports. Product staff felt that the greatest barrier to increasing participation in the product is a lack of knowledge of the product among potential participating customers.
- ◆ **Disjointed process/Lack of collaboration** – The timing between the audit and improvement project limits the ability of some customers to participate. All three

improvements must be completed within a two-year window after submitting the application, and product staff felt that the trade partners and customers may not understand the timeline, including when the audit was completed. The three or more measures that need to be completed to qualify for the bonus rebate typically require different trade partners, such as insulation and HVAC specialties. While the implementer provides some support to the customers along the way to identify potential measures and connect them to the appropriate trade partner, both the implementer and product staff said there was historically no collaboration between trade partners in different specializations. This presents a challenge to facilitating the process for customers, particularly for those customers who sign up outside of the implementer. Additionally, the implementer noted that there was sometimes a gap in support for customers after completing an audit, to help them understand their next steps. After the audit is completed, customers could use additional support in registering for the Whole Home product and selecting the measures and trade partners from the recommended list.

- ◆ **Low trade partner participation** – The Whole Home product has experienced decreasing trade partner participation in the past several years. Product staff felt that the recent change to remove the insulation project requirement might have discouraged insulation trade partners from participating, as they used to represent the majority of registered trade partners. Additionally, some measures, such as HVAC-related improvements, are typically completed in cases of emergency, which does not allow the customer to complete an audit ahead of time. As a result, HVAC trade partners projects often do not qualify for participation in the product. The staff felt there was a need to reach out to some non-participating trade partners to further understand the barriers to participating in the product.
- ◆ **Limited understanding of product processes** – Staff reported that there was confusion among both trade partners and customers in regard to the process of participating in the product. Specifically, the implementer cited instances where trade partners did not understand at which step in the process they could submit for their own incentives.
- ◆ **High pre-requisites** – There are high barriers to entry for both trade partners and customers that may limit their product participation.
 - ◇ On the customer side, customers must complete a Home Energy Audit with blower door and/or infrared or Home Energy Squad Plus visit before they can apply for the Whole Home product.
 - ◇ Xcel Energy's trade partners have to go through a separate process to become approved trade partners for the Whole Home product. Moreover, there is only a paper-based option to submit applications for the bonus rebate, which may discourage some trade partners who prefer the online submission process.
- ◆ **Benefits overlap with other products** – There are no extra incentives that differentiate the Whole Home product from other stand-alone products when customers decide to proceed with one or two improvements. While there is a bonus for bundling three or more improvements offered by the Whole Home, the additional rebate may not be sufficient to attract customers to participate.

Feedback on Evaluation Priorities

During our interviews, product staff identified research topics they would like the evaluation team to address. This section summarizes these topics along with additional ones identified by the evaluation team based on our analysis of the staff interview findings. We will consider these research topics when prioritizing portfolio-wide evaluation needs and, as we are able, incorporate them into the final evaluation plan for the Whole Home product.

Research Topics Identified by Xcel Energy Staff

Interviewees reported interest in the following research topics:

- ◆ Increase customer awareness of the Whole Home product.
 - ◇ Interview audit providers to understand if there are opportunities to discuss the product with homeowners both before and after the audit process. Currently, the product does not require the auditors to discuss the product when working with customers, and there is little incentive for them to do so.
 - ◇ Determine what marketing channels would help customers better engage with the product and motivate them to participate in the Whole Home product. One potential channel that Xcel Energy is interested in exploring is whether equipping the trade partners with hand-out marketing materials to share with customers when discussing the product would be helpful.
 - ◇ Understand what level of outreach that is needed to proactively promote the product and how best to leverage the implementation team to promote the product.
- ◆ Explore strategies for better educating auditors, implementers, and trade partners about the Whole Home product and their roles.
 - ◇ Understand whether dedicated resources for auditors, implementers, and trade partners would help them better understand their roles and responsibilities throughout the different processes of the product. Connect with peer products to understand their approach on trade partner engagement.
 - ◇ Understand why participation among trade partners has decreased in recent years and explore ways to engage with non-participating trade partners. Specifically, connect with insulation contractors who have stopped participating in the product in the past several years and with HVAC contractors, who have been consistently difficult to recruit for the product.
- ◆ Evaluate the current product's strengths and challenges.
 - ◇ Investigate if current benefits are sufficient to motivate customers to participate.
 - ◇ Explore ways to simplify and clarify the product, while ensuring that customers receive continuous support throughout different phases of the product.
- ◆ Understand Peer Product Best Practices
 - ◇ Explore peer utilities' experiences with managing customer engagement including monitoring customer complaints and tracking customer engagement at different phases of the process.
 - ◇ Understand if peers have experienced challenges with getting customers to participate and trade partners to actively engage throughout the process.

- ◇ Determine what tips & information have worked well for peer programs when motivating the customer to engage throughout the product.
- ◇ Identify marketing strategies to improve customer awareness and participation.

C.3 Participating Customer Interview Results

To support the process and impact evaluation of the 2022 Xcel Energy efficiency products, members of the TRC evaluation team conducted in-depth telephone interviews with participating customers. This section presents the results from the questions covered in the in-depth interviews of customers who have participated in the Colorado Whole Home Efficiency product.

Section A: Awareness of Rebates and Energy Efficiency Home Upgrades

A1. I'd like to start by asking about the home energy audit that was performed at your home and how you first heard about the Xcel Energy rebates for bundling energy efficient home upgrades through the Home Performance with Energy Star program? [PROBE] Do you recall receiving any marketing from Xcel Energy regarding the program, for example, an email?

- ◇ Most respondents first heard about Xcel Energy's rebates for bundling energy efficient home upgrades through the Home Performance with Energy Star program through referrals (n=4), their own research (n=2), or don't remember the source (n=2).
- ◇ One respondent first heard about it through a colleague (n=1), while another received an email from Xcel Energy (n=1). Some respondents were initially looking to improve insulation in their home, others to solve issues around temperature control.

A1a. Were you aware of the rebates available through Home Performance with Energy Star before you had a home audit performed?

- ◇ Out of the 8 respondents, only 1 was aware of the rebates before having a home audit performed. The rest learned about the rebates from either the contractor, the auditor, or a neighbor.
- ◇ One respondent received a check a few months after the upgrades were performed.

[If audit conducted through Home Energy Squad]

A1b. How did you first learn about the Home Energy Squad assessments available through Xcel Energy?

[If the audit not conducted through Home Energy Squad]

A1b1. Who conducted the audit that you completed before participating in the Home Performance with Energy Star program?

- ◇ Most (n=6) respondents completed the audit through Home Audit, except two (n=2) who went through Home Energy Squad.

A1b2. How did you first learn about the availability of that audit?

- ◇ The respondents learned about the availability of the audit from different sources: trade partner (n=3), Google (n=1), neighbor (n=1), Xcel Energy email (n=2), and a colleague (n=1).

A1c. And what initially motivated you to have a home energy audit/Home Energy Squad assessment conducted at your home?

- ◆ The motivations for the home energy audit/assessment were to get more insulation (n=1), to improve heating and cooling in the second story of the house and achieve a consistent temperature throughout (n=1), to improve insulation after recently moving to a new house and receiving an email from Xcel Energy (n=1), and to improve energy efficiency and thermal comfort after buying an older home (n=1).

A1d. How did you sign up for Home Performance with Energy Star?

[PROBE] Did you call Xcel Energy to sign up? Did you sign up through your audit provider? Did you sign up through the website?

- ◆ The majority of the respondents had the contractor help with the Home Performance with Energy Star sign-up process, either by filling out a form, submitting the application, or doing the administrative work. Some respondents can't remember exactly how they signed up, but the contractor was involved.

A1e. [If not discussed already] Did your audit provider give you information on Xcel Energy's Home Performance with Energy Star?

[If yes] What information do you recall the audit provider discussing with you?

- ◆ The audit provider provided information on Xcel Energy's Home Performance with Energy Star, but the level of assistance varied. Some customers (n=2) had a positive experience, with the contractor taking care of most of the paperwork and the customer receiving a larger rebate.
 - ◇ One customer (n=1) felt that the energy advisor did not add much value and were not well informed or positioned to help with the rebate process.

A2. Who installed your home upgrades through the Home Performance with Energy Star program?

[IF MEAS_COUNT > 1]

- Did the same person install all of the home upgrades you made through the Home Performance with Energy Star program? If not, who installed the other upgrades?
- ◆ One respondent said the same person installed all home upgrades through the program. C2 said the same contractor installed the smart thermostat. One said the same auditor and installation contractor installed all upgrades. One said the same contractor installed all projects (wall insulation, attic insulation, and air sealing). One respondent said a different contractor installed the upgrades but was recommended by the auditor.

A3. Next, I'd like to understand a little more about your awareness of energy-efficient options for upgrading your home. Before your home energy audit, how familiar would you say you were with opportunities to increase energy efficiency in your home, on a scale of 1 to 5, where 1 means "not at all familiar" and 5 means "extremely familiar"?

- ◆ Most respondents rated their familiarity with energy-efficient options for upgrading their home as 3, 4 or 5. Respondents C2, C1, C5 and C6 (n=4) rated their familiarity as 4 or 5, while respondents C3, C7, and C8 (n=3) rated their familiarity as 2 or 3.

A3a. How would you say your awareness of energy-efficient options for upgrading your home changed after your audit?

- ◆ Most respondents (C4, C5, C6, C7, C8; n=5) reported increased awareness of energy-efficient options for upgrading their home after the energy audit, with ratings ranging from 4 to 5 out of 5. However, two respondents (C1 and C2, n=2) reported no change in their awareness as they were already familiar with the options prior to the audit.

A4. And before your home energy audit, what type of equipment would you say you were most familiar with? [PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]

- ◆ Customers C5 and C8 (n=2) were familiar with heating and cooling equipment and HVAC.

A5. Before your home energy audit, what type of equipment would you say you were least familiar with? [PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]

- ◆ Customer C8 (n=1) was least familiar with washing machine, light bulbs, and shower flow.

Section F: Free-Ridership (Residential)

Next, I am going to ask about factors that may have influenced your decision to install the projects you completed through the Home Performance with Energy Star program.

F1a. Thinking specifically about <MEAS_1>, how influential was the rebate available for this project through the Home Performance with Energy Star program on your decision to install these upgrades? Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.” [INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ 0 – n=1
- ◆ 1 – n=1
- ◆ 3 – n=1
- ◆ 5 – n=1
- ◆ 7 – n=2
- ◆ 10 – n=1
- ◆ The Home Performance with Energy Star product's rebate had varying levels of influence on the decision to install upgrades, with the average rating being 5 on a scale of 0 to 10.

[IF MEAS_COUNT = 3]

F1b. How influential was the bonus rebate for installing three home upgrades, available through the Home Performance with Energy Star program on your decision to install <MEAS_1>? Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.” [INTERVIEWER NOTE: If respondent

does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ The bonus rebate offered through the Home Performance with Energy Star program had varying levels of influence on the participants' decisions to install home upgrades.
- ◆ Most participants were not aware of the bonus rebate (n=6).
- ◆ 4 (noted they weren't really aware of the bonus rebate), 6

[ASK ALL]

F1c. How influential was the home energy audit or Home Energy Squad assessment on your decision to install <MEAS_1>? This could include a conversation with the auditor or results received in your audit report. Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.” [INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ 0 (n=1)
- ◆ 7 (n=1)
- ◆ 7.5 (n=1)
- ◆ 8 (n=2)
- ◆ 10 (n=1)

F1d. How influential was any information or encouragement you received from an Energy Advisor on your decision to install <MEAS_1>? This could include a conversation with the auditor or results received in your audit report. Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.” If this question does not apply to you (you did not work with an Energy Advisor), please let me know. [INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ Not applicable (n=8) – Participants did not work with the Energy Advisor prior to completing work, all worked only through their trade partner.
 - ◇ One received a call from the implementer who asked to perform a quality inspection after the work was complete. The respondent declined because it was during the Covid pandemic.
 - ◇ One said they communicated with the implementer after their work was complete about receiving the rebate.

F1e. How influential was any other information or encouragement you received from Xcel Energy—including information found on Xcel Energy’s web site and the “Find a Contractor” tool—on your decision to install <MEAS_1>? This could include promotional or educational materials or talking to someone at Xcel Energy. This could also include talking to someone else that had participated in the Xcel Energy program. Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.” [INTERVIEWER NOTE: If respondent does not understand

the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ Overall, the influence was moderate, with some participants stating that they would have gone ahead with the installation regardless of the information received from Xcel Energy.
- ◆ 0 (n=1)
- ◆ 4 (n=1)
- ◆ 5 (n=1)
- ◆ 5.5 (n=1)
- ◆ 7 (n=1)
- ◆ N/A (n=3)
- ◆ Some participants found the website and the "Find a Contractor" tool to be useful in finding a contractor, while others communicated solely with the contractor and did not receive any communication from Xcel Energy.

F1f. And how influential was the contractor recommendation on your decision to install <MEAS_1>? Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential”. [INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale, where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ The contractor recommendation was moderately to highly influential in the decision to install measure (e.g., insulation) with a range of 5 to 10 on a scale of 0 to 10.
- ◆ 5 (n=1)
- ◆ 6 (n=1)
- ◆ 7 (n=1)
- ◆ 8 (n=1), “Strong” (n=1)
- ◆ 8.5 (n=1)
- ◆ 9 (n=1)
- ◆ 10 (n=1)
- ◆ The majority of respondents rated the influence between 7 to 9 and one respondent rated it as 10 due to the contractor's credibility and help in educating the customer.

F1g. Have you participated in an Xcel Energy rebate or energy efficiency program prior to this year?

- ◆ Only one respondent had participated in Xcel Energy rebate or energy efficiency program prior to this year.
- ◆ The rest of the respondents had not participated in the program.

[ASK IF F2d = Yes]

F1g_1. And how influential was your participation in the previous Xcel Energy program on your decision to install the <MEAS_1>? Please use a scale from 0 to 10, where 0

means “not at all influential” and 10 means “extremely influential”. **[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale, where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]**

- ◆ 8 (n=1)

F2. In your own words, how would you describe the importance of the Xcel Energy Home Performance with Energy Star rebates on your decision to install <MEAS_1>?

- ◆ “For me, it was nice to have but not really influential. I was probably already going to do it because it was so necessary. It was nice to get the rebate. The rebate was probably a 5 or a 6.”
- ◆ “I have a really old house. I was ready to do the big job, even without the rebate. The rebate was a nice bonus.”
- ◆ “There’s no information from Xcel about the rebates and there were no numbers in the statement. If those numbers were more transparent or made available just on the statement/ if I knew earlier, that would have probably prompted me to do this sooner or take a deeper look into it. It’s 20-30% of the project, substantial offset of the cost for the improvement.”
- ◆ “It’s very important from the standpoint of expediting things, justify spending the money, pointing out what options there are.”

F3a. Now thinking about your decision to install <MEAS_1>, how much would you say the Home Performance with Energy Star program influenced you to install energy efficient home upgrades after your audit? Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ 3 (n=1)
- ◆ 4 (n=1)
- ◆ 5 (n=1)
- ◆ 6 (n=1)
- ◆ 7 (n=1)
- ◆ 8 (n=3)
- ◆ Some participants said that the rebate program was not the main driver for their decision but helped justify their decision. Others said that the contractor’s feedback and support were more influential than the program.

[If MEAS_COUNT = >1]

F3b. How much would you say the Home Performance with Energy Star program influenced you to install multiple energy efficient home upgrades after your audit?

Please use a scale from 0 to 10, where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ The majority of participants rated the program as having a moderate influence on their decision (between 3 and 5.5).
- ◆ 1.5 (n=1)
- ◆ 3.5 (n=1)
- ◆ 5 (n=1)
- ◆ 5.5 (n=1)
- ◆ 8 (n=2)
- ◆ DK (n=1)
- ◆ Some participants said that they would have installed the upgrades regardless of the program, while others found it to be less influential in their decision.

[IF MEAS_COUNT > 1]

F6. According to our records, you also installed <MEAS_2> and <MEAS_3> through the Home Performance with Energy Star program. Was your decision-making process the same for these two projects as we just discussed for <MEAS_1>?

- ◆ No responses

[IF NO, REPEAT F1-F6 battery for other measures; IF YES, proceed to F4]

Now I'd like you to imagine that the rebate program, including rebates available for each project and the bonus rebate for completing three projects, and any support provided by Xcel Energy after the audit, had never existed. Which of the following alternatives, would you have been most likely to do? Would you have...

F4. [If MEAS_COUNT = 1]/F5 [If MEAS_COUNT >=3]

1. Installed the same type of upgrade you did, but less energy efficient

- ◆ Yes (n=2)

F4_1/F5_1. How much less efficient? [PROBE] Minimum efficiency required by code? More efficient than code but less efficient than what you installed through the program?

- ◆ One participant would have used the auditor and energy auditor but would have spaced out the upgrades.
- ◆ One participant would have pursued insulation but not the efficient upgrade, as they did not fully understand the concept. Both participants received rebates for other upgrades, such as a high-efficiency water heater and furnace.

1.

2. **[If applicable]** Installed the same upgrade but fewer units **[Interviewer note: depending on measure type, clarify – example: 1 wall instead of 2 walls for insulation, less weather stripping, etc.]**

- ◆ Yes (n=2)
- ◆ One said they would not have installed a smart thermostat, the other said they would have not installed air sealing.

3. Installed the same equipment but later

- ◆ Yes (n=2)
- ◆ Two participants said they would have waited about 6 months and one to three years between installing the insulation and furnace and water heater, as the upgrades were expensive. They also added whole house fans and wall insulation, which they believed was the best cooling system for their house.

4. Kept your existing equipment **[PROBE** if needed: could be as-is or repair existing equipment]

- ◆ No responses

5. Done exactly the same thing as you did through the program

F4_2/F5_2. On a scale of 1-10, with 0 being very unlikely and 10 being very likely, how likely would you have been to do exactly the same thing as you did through the program, if it did not exist?

- ◆ Two respondents said they would have done exactly the same thing as through the program.
- ◆ 9 (n=1), 7 (n=1)

6. Something else **[SPECIFY]**

- ◆ No responses

7. **[IF MEAS_COUNT >1] Completed** fewer projects (Installed fewer measure types)

[INTERVIEWER NOTE: CLARIFY ANY DISCREPANCIES BETWEEN INFLUENCE SCORE AND COUNTERFACTUAL SCORE]

[If F4 = 2 OR F5 = 2]

F5b. You said that if the rebate program had never existed, you would have installed less energy efficient upgrades as you did. As best as you can, please estimate the percentage of the energy efficient equipment that you would have installed in **<YEAR>** without the program.

- ◆ No responses

[IF F5b = <50%]

F5c. Why would you have installed that much less energy efficient upgrades?

- ◆ No responses

F5d. Without the program, would you have installed the remaining <100% - Q2> percent of the energy efficient equipment at a later time?

- ◆ No responses

[IF F5d = Yes]

F5e. Without the program, when do you think you would have installed the energy efficient equipment?

- ◆ No responses

[IF F5e >= 1 year later]

F5f. Why would it have been that much later?

Section S: Spillover (Residential)

[ASK ALL]

S1. Since your participation in the rebate program in <MONTH> <YEAR>, have you or has anyone in your household made any energy-efficient upgrades or installed any energy efficient equipment in your home without a rebate from Xcel Energy? [**PROBE** for heating and cooling equipment, clothes washers or dryers, smart thermostat, air sealing and weather stripping, wall or attic insulation]

[Analysis note: “Like” Spillover]

- ◆ Most customers (n=6) have not made any energy-efficient upgrades or installed any energy-efficient equipment without a rebate from Xcel Energy. Two customers made some improvement but did not know about the rebate and made these changes due to replacement needs and considering energy efficiency. Both noted that the program was not influential to their decision.

[ASK IF S1 = Yes, ELSE SKIP TO S7]

S2. Did the rebate program influence you in any way to make these additional improvements?

[If yes] please specify]

- ◆ No (n=2)

[ASK IF S2 = Yes, ELSE SKIP TO S7]

S3a. What type of equipment did you install? [ASK OPEN END, COMPARE TO BELOW LIST OF WHE -ELIGIBLE EQUIPMENT]

[If type of heat pump is not mentioned, PROBE: Was it a ground source, air source, or mini-split heat pump? If not sure, code as simply “heat pump.”]

1. Central air conditioner
2. Evaporative cooler
3. Heat pump
4. Air source heat pump/cold climate air source heat pump

5. Mini-split heat pump/cold climate mini-split heat pump
6. Ground source heat pump
7. Gas furnace (95%+ AFUE)
8. Boiler
9. Tankless water heater
11. Electric heat pump water heater
12. ENERGY STAR clothes washer
13. ENERGY STAR clothes dryer
14. ENERGY STAR smart thermostat (eligible to enroll in AC Rewards)
15. Air sealing and weatherstripping 20% reduction
16. Wall insulation (30% up to cap)
17. Attic insulation (30% up to cap)
18. More efficient refrigerator
19. More efficient dishwasher
20. Efficient windows
21. Efficient doors
22. Other **[SPECIFY]**

- ◆ One respondent has installed weather stripping and one respondent considered energy efficiency in all new appliances, installing a high-efficiency furnace, and has only LED bulbs in the household. This respondent also did a separate installation project for the garage to improve efficiency.

[Ask for each response in S3a]

S4a. How many units of the <EQUIPMENT FROM S3a> did you install?

[INTERVIEWER NOTE: S4c – S6 FORM A LOOP THAT WE GO THROUGH FOR EACH OF THE FIRST TWO MENTIONS IN S3a/S3a2. PIPE IN RELEVANT RESPONSE FROM S3a and S3a2 AS <Spillover_Measure> FOR EACH ROUND THROUGH THE LOOP.]

[ASK FOR EACH ITEM SELECTED IN S3a]

[FIRST SELECTED IN S3a]

S4c_1. How do you know that the <Spillover_Measure> you installed was energy efficient?

[PROBE IF S3a = 1 - 5]

- **PROBE:** What was the SEER of the... **[DO NOT ASK FOR GROUND SOURCE HEAT PUMPS. Interviewer note: SEER ratings range from 13 to 30.]**

- ◆ One respondent found out that the measures installed were energy-efficient through product research provided by the manufacturers and consumer websites that help with energy-efficient decisions. These products have energy efficiency ratings attached to them, but the customer did not find any Xcel Energy rebates for the additional equipment he installed.

S5_1. How important was your experience with the Home Performance with Energy Star program, including the equipment you installed through the program, in your decision to install the additional <Spillover_Measure> on your own? Please use a scale from 0 to 10, where 0 is “not at all important” and 10 is “extremely important”.

- ◆ 0 (n=1)
- ◆ 6 (n=1)

S6_1. If you had not received the rebate for <MEASURE_DESC>, how likely is it that you would have installed this <Spillover_Measure>, using a scale from 0 to 10, where 0 means you “definitely WOULD NOT have installed” and 10 means you “definitely WOULD have installed” them?

- ◆ 10 (n=1)
- ◆ 8 (n=1) – Discrepancy clarified – would still have completed the project if they had not participated in Whole Home Efficiency.

[SECOND SELECTED IN S3a]

S4c_2. How do you know that the <Spillover_Measure> you installed was energy efficient?

- ◆ No responses

S5_2. How important was your experience with the Home Performance with Energy Star program, including the equipment you installed through the program, in your decision to install the additional <Spillover_Measure> on your own? Please use a scale from 0 to 10, where 0 is “not at all important” and 10 is “extremely important”.

- ◆ No responses

S6_2. If you had not received the rebate for <MEASURE_NAMEA>, how likely is it that you would have installed this <Spillover_Measure>, using a scale from 0 to 10, where 0 means you “definitely WOULD NOT have installed” and 10 means you “definitely WOULD have installed” them?

- ◆ No responses

Section B: Barriers & Motivations to Install Energy-Efficient Equipment

B1. Now I want to ask you a few questions about the choices you made when you installed your <MEASURE_DESC>? What are the reasons you chose to install the particular home upgrades you made?

- ◆ The survey responses indicate that the main reasons for choosing to install home upgrades, such as insulation, were to improve energy efficiency, temperature comfort, and to address issues with existing insulation (n=3). Some respondents had prior experience with similar upgrades and knew the impact they had on heating costs and

comfort (n=1). One respondent expressed hesitation about the installation, specifically with regards to a whole house fan and its ability to cool enough (n=1).

B1a. What were your initial perceptions of the benefits of the efficient equipment you chose?

- ◆ The initial perceptions of the benefits of the efficient equipment among the respondents were mainly focused on improved comfort and reduced energy usage. One respondent believed that insulation would dramatically lower home energy usage and this was indeed the case, although the improvement was limited due to the low starting level of insulation in their old house. One respondent saw the benefits of insulation and air sealing in terms of reduced electricity usage and improved comfort. Another respondent hoped to save on heating bills and while the improvement was not as dramatic as expected, there was still some improvement. One respondent sought to improve comfort on their second floor. One respondent mainly focused on the comfort level and found it difficult to quantify the benefits, but overall, the upgrades were seen as positive, especially during hot weather.

B1b. What (if any) were your initial perceptions of the drawbacks of the efficient equipment you chose?

- **[PROBE]** Did you have any hesitations or concerns about the equipment you chose, before you installed it?
- **[PROBE]** Did you consider any lower cost or lower efficiency equipment? If so, what was that equipment?
- ◆ Concerns about the air quality during the insulation process (n=1).
- ◆ Worried about privacy regarding voice controls on the smart thermostat, both with Xcel and the manufacturer (n=1).
- ◆ No concerns as their neighbors had installed the same equipment (n=1).
- ◆ No hesitations or concerns as they needed a more thorough job and did not consider lower cost equipment (n=1).
- ◆ Primarily concern was cost, as well as the messy, invasive, and loud nature of the installation process which resulted in additional cleaning and fixing work (n=1).
- ◆ Primarily concern was cost, but they expected a minimal cost of installation and minimal mess (n=1).
- ◆ In general, the respondents had varying concerns, with some having worries about privacy and air quality, while others had concerns about the cost and messiness of the installation process. However, a few respondents had minimal concerns and did not consider lower cost or lower efficiency equipment.

B2. What other considerations factored into your decision to install the equipment you chose?

- ◆ The common factors among the respondents' decision to install the equipment were comfort, saving money, and impact on the home (specifically the second-floor bedrooms).
- ◆ One respondent would have appreciated more information before making their upgrade decision.
- ◆ One respondent considered comfort and money saving opportunities.

- ◆ One respondent focused on upgrades that would make an immediate impact, specifically those impacting the second floor where the bedrooms are located.
 - ◆ One respondent was driven by the need to improve their work-from-home environment.
 - ◆ No other considerations (n=1)
- B2a.** Were the upgrades you made through the Home Performance with Energy Star program recommended in your audit report?
- ◆ One respondent said they followed all the recommendations from the Home Performance with Energy Star program audit report, including adding wall insulation. However, there was no rebate available for the wall insulation.
- B2b.** When you reviewed your audit report, how did you determine and prioritize which upgrades you wanted to make?
- ◆ Temperature and comfort level (n=1)
 - ◆ Those that would make the most immediate impact, those impacting the second floor where the bedrooms were located (n=1)
 - ◆ Half followed what the report showed, half were based on intuition based on a similar process they had followed in their old house (n=1)
 - ◆ Worked with contractor to follow the recommendation from the report (n=1)
 - ◆ Not asked due to time constraints (n=4)
- B2c.** Who (if anyone) from Xcel Energy did you talk to when determining what upgrades you wanted to make? **[PROBE]** The audit provider, an Energy Advisor, another staff member from the Home Performance with Energy Star program, someone else?
- ◆ Most respondents made their decision on the upgrades independently, without talking to Xcel Energy staff. They did not consult with anyone from Xcel Energy such as an Energy Advisor or someone from the Home Performance with Energy Star program.
 - ◇ Respondents worked with their trade partner or based on personal decision making (n=1)

Section C: Benefits, Satisfaction, & Feedback

[ASK ALL]

- C3.** We just talked a lot about your decisions to install your equipment, now please rate the importance of the following factors in terms of your decision to participate in the rebate program through Xcel Energy, using a 1 to 5 scale where 1 is “Not at all important” and 5 is “Very important.” You can also tell me if something was not applicable to your experience or if you don’t know:
- C3a. Recommendation from a family member/friend/neighbor**
- ◆ [Question series only asked to three respondents due to time and question prioritization]
 - ◆ 1 (n=2)
 - ◆ 4 (n=1)

- ◆ One respondent rated it as 1 out of 5 but stated that they have told about 20 friends about the program since getting the upgrades done.

C3b. Interest in making multiple energy efficient upgrades to your home

- ◆ 4 (n=1)
- ◆ 5 (n=1)
- ◆ Not asked to one respondent

C3c. Recommendation from a contractor

- ◆ 3 (n=1)
- ◆ 5 (n=1)
- ◆ Not asked to one respondent

C3c_1. Was it the same contractor who installed any of your Home Performance with Energy Star projects or someone else?

C3d. Past experience with program's participating contractors

- ◆ 1 (n=1)
- ◆ 5 (n=1)
- ◆ Not asked to one respondent

C3e. The dollar value of the rebate offered by Xcel Energy for efficient upgrades

- ◆ 1 (n=1)
 - ◇ Wasn't aware, they had no clarity on exactly what they would potentially save through rebates.
- ◆ 4 (n=1)
- ◆ Not asked to one respondent

[ASK C3f IF MEAS_COUNT = 3]

C3f. Bonus rebate offered by Xcel Energy for installing multiple measures

- ◆ No responses, respondents not aware of bonus rebate

C3g. Information about the program benefits from Xcel Energy marketing materials (e.g., mailing, email, or ad)

- ◆ 1 (n=1)
- ◆ 2 (n=1)
- ◆ Not asked to one respondent

C3h. Recommendation from an Xcel Energy representative

- ◆ Not applicable – Most (7 of 8) respondents did not ever speak with an Xcel Energy representative or implementer representative.
- ◆ One respondent mentioned that having a record of rebates in their account with Xcel Energy would be helpful for tracking purposes and to educate themselves better about

the program. The respondent already had a system for tracking their own usage and information but adding this to their account would enhance their understanding.

C3i. Previous participation in an Xcel Energy program

- ◆ 4 (n=1)
- ◆ Not applicable (n=2)

C3j. Are there any other factors that influenced your decision to apply for an Xcel Energy rebate through Home Performance with Energy Star, that I did not mention?

- ◆ No additional factors

[ASK IF C3j = 1]

C3j_1. How would you rate the importance of < C3j>?

- ◆ Not applicable

C3k. What motivated you to participate in Home Performance with Energy Star, rather than applying for rebates for the standalone programs? [Clarify, if needed, that there are separate rebate programs for various types of energy efficiency equipment]

- ◆ One respondent stated that they participated in Home Performance with Energy Star because they were already planning to make all the energy efficiency upgrades.

C3l. When you first learned of the Home Performance with Energy Star program, what were your initial perception of the benefits the program would offer you?

- ◆ One respondent initially perceived the Home Performance with Energy Star program as a nice added benefit, but it did not play a significant role in their decision making.

C3m. Did you have any concerns about needing to complete multiple projects within the two-year timeframe after your audit? If so, what were those concerns?

- ◆ No concerns described

C4. Please rate your satisfaction with various aspects of your experiences with the equipment and rebate. For each, please rate your satisfaction on a scale from 1 to 5, where 1 is “very dissatisfied” and 5 is “very satisfied” or let me know if it is not applicable to you. How would you rate your satisfaction with:

C4a. The performance of the equipment you installed

- ◆ 3 (n=1)
- ◆ 4 (n=1)
- ◆ 5 (n=6)

C4b. The process of finding a qualified contractor

- ◆ 2 (n=1)
- ◆ 3 (n=1)
- ◆ 5 (n=4)

- ◆ Not applicable (n=2)

C4c. The contractor that installed the equipment

- ◆ 4 (n=1)
- ◆ 5 (n=6)

C4d. The installation of the equipment

- ◆ 2 (n=1): Primarily because of the mess and extra work to clean up.
- ◆ 3 (n=1)
- ◆ 4 (n=1)
- ◆ 5 (n=4)

C4e. Information provided from Xcel Energy on the rebate process

- ◆ 1 (n=1)
 - ◇ Unhappy with experience with the product.
- ◆ 2 (n=2)
 - ◇ [Describing interaction with implementer] “They were friendly and emphasized how helpful they were prepared to be but didn't seem to be in a very good position to actually help.” Respondent felt they didn't seem to have information, e.g., on whether an application has been filed or when it might be reviewed. They would sometimes contact the contractor asking for information on submission of application, copying the customer when the customer himself had been in direct contact with the contractor. The individual's willingness to participate was not met with the tools and transparency of the process to be effective.

The customer was also didn't get clear information about the timeline on when they should expect the rebate after the application was submitted or about the rebate amount.

- ◆ 3 (n=3)
- ◆ Not applicable (n=2)

C4f. The amount of time it took to receive your equipment rebate

- ◆ 1 (n=1)
- ◆ 2 (n=1)
- ◆ 3 (n=1)
- ◆ 4 (n=3)
- ◆ 5 (n=1)
- ◆ One respondent rated it a 5 and were immediately paid on the spot.
- ◆ One respondent rated it a 2 and felt it took a very long time, while another rated it a 1 and was very dissatisfied with the slow process, lack of transparency on the timeline, and the need for multiple exchanges for clarity.

[ASK IF C4f < 3]

C4f_1. Was there anything you are aware of that caused a delay in your rebate?

- ◆ No (n=2)
 - ◆ “Since the contractor submitted it, I was contacting them, and they were contacting Xcel, I didn’t deal with them directly. It took me around 2 months.”

[ASK IF MEAS_COUNT = 3]

C4g. The amount of time it took to receive your bonus rebate for completing three projects.

- ◆ No responses/Not applicable

[ASK IF C4g < 3]

C4g_1. Was there anything you are aware of that caused a delay in your rebate?

- ◆ No responses/Not applicable

[ASK ALL]

C4h. The amount of the equipment rebate you received

- ◆ 1 (n=1)
- ◆ 3 (n=1)
- ◆ 4 (n=2)
- ◆ 5 (n=3)
- ◆ No response (n=2)
- ◆ Two respondents rated it a 5 and one found it to be more than expected and another had nothing to compare it to. One respondent didn’t recall the amount and considered it not significant.

[ASK IF C4h < 3]

C4h_1. Was the amount of the rebate you received different from what you were expecting?

- ◆ One respondent did not have any expectation before receiving the rebate.
- ◆ One respondent recalled receiving a general sense of the rebates from energy advisor but did not ever have a clear amount in mind. They considered the amount modest and not consequential.
- ◆ One respondent said “Fine, don’t have anything to compare it. My hope is contractors just don’t go up and increase their prices based on what they think you’re going to get a rebate from. It’s a nice bonus I wasn’t expecting.”

[ASK IF C4h_1 = 1]

C4h_2. What amount were you expecting?

[ASK IF MEAS_COUNT = 3]

C4i. The amount of the bonus rebate for you received for completing three projects

- ◆ No response/Not applicable

[ASK IF C4i < 3]

C4i_1. Was the amount of the rebate you received different from what you were expecting?

- ◆ No response/Not applicable

[ASK IF C4i_1 = 1]

C4i_2. What amount were you expecting?

- ◆ One respondent, who was unhappy with increasing utility rates, was expecting the rebate amount to be doubled due to Xcel Energy increasing rates after they completed their upgrades.

[ASK ALL]

C4j. Support you received from Xcel Energy in deciding which upgrades to make

- ◆ No responses/Not applicable

C4k. The information received in your audit report

- ◆ 3 (n=1)
- ◆ 4 (n=4)
- ◆ 5 (n=1)
- ◆ No response (n=2)

[ASK ALL]

C6. Thinking about your experience from start to finish, how would you rate your satisfaction with the rebate program as a whole? [IF NEEDED: Please use the same scale from 1 to 5, where 1 is “very dissatisfied” and 5 is “very satisfied”]

- ◆ 2 (n=1)
- ◆ 3 (n=2)
 - ◇ One respondent felt the rebate was insignificant and required a lot of effort to follow up.
 - ◇ One respondent said they were just satisfied that the program exists.
- ◆ 4 (n=2)
- ◆ 5 (n=1)
 - ◇ “We were really satisfied with it.”

[ASK IF C6 < 3]

C6a. Why weren’t you satisfied with your experience with the rebate program?

- ◆ One said that rebates felt insignificant and required effort to follow-up.

[ASK IF C6 = 3 or 4]

C6b. What else could program staff do to improve your satisfaction with the rebate program?

- ◆ Improve the information provided (n=1)
- ◆ Improve awareness of the rebate program (n=1)
- ◆ Show the work that had been completed for the customer in their account (n=1)
- ◆ Target customers based on their location (n=1)
- ◆ Provide a “one-stop shop” for information on audit results, rebate programs, and contractors (n=1).

C7. Next, I am going to ask you to rate how easy or difficult the following tasks associated with the rebate program were to complete, using the same scale from 1 to 5, where 1 is “very difficult” and 5 is “very easy”. [RANDOMIZE]

[Series was only asked to one customer due to time and prioritization of questions.]

C7a. Complete the home audit requirement prior to participating

- ◆ 5 (n=1)

C7b. Complete program applications, rebate forms, or other program paperwork

- ◆ 5 (n=1)

C7c. Get in touch with an Xcel Energy representative

- ◆ No responses/Not applicable

C7d. Determine eligibility and rebate tier

- ◆ 5 (n=1)

C7e. Determine equipment models that are affordable within budget

- ◆ 4 (n=1)

C7f. Complete the equipment installation through a contractor

- ◆ 5 (n=1)

[IF MEAS_COUNT = 1]

C7g. Finding a contractor to complete the work

[IF MEAS_COUNT > 1]

C7h. Finding contractors to complete each of your projects

C7h_1. How did you find the contractors that completed each of your projects? [Probe for whether they contacted Xcel Energy for support in finding contractors, whether their contractor made a recommendation, did their own research, etc.]

[Ask for any C7a – C7f < 3]

C8a – C8f. Why wasn't it easy to <RESTORE ANSWER WORDING FROM C7a – C7f>

- ◆ No response/not applicable

C9. What (if any) other challenges did you experience while participating in the Home Performance with Energy Star program?

- ◆ One respondent said that understanding the sequence of steps for project line up (for example, they wished that they had completed their attic insulation first).
- ◆ One respondent said that it was difficult to understand the cost-benefit of doing the work and the impacts of the rebates on their decisions.

C10. What is the program doing well, that they should continue doing?

- ◆ Not asked due to time/question prioritization.

C11. What value or benefits have you experienced as a result of participating in the Home Performance with Energy Star program? [PROBE AS RELEVANT for financial savings, energy savings, reduced maintenance, increased comfort, improved equipment performance, environmental benefits]

- ◆ The customers experienced increased temperature-related comfort (n=2)
- ◆ Financial savings through rebates which offset the cost for improving the comfort of their homes (n=2)
- ◆ One customer noted that despite the increased comfort, they felt their house should have been made much more comfortable because of the increases in utility bill costs.

C12. What recommendations do you have for Xcel Energy to improve the Home Performance with Energy Star program? [**PROBE** for additional resources or tools that would have make it easier to participate]

- ◆ Provide more resources and tools to help make the participation process easier, and by
- ◆ Provide additional assistance with decision-making process. This includes providing more information on the structure of rebates, the amount available for different projects, and the cost-benefit analysis of participating in the program.
- ◆ Additionally, they suggest improving the speed and transparency of the process, including providing a line-item cost breakdown and making the rebates available sooner after the work is completed.

Section H: Demographics

Thank you for your patience; I only have a few questions left.

H1. Which of the following best describes your home? [READ 1 – 5]

1. Single-family home
 - ◆ N=4
2. Single-family attached home, such as a duplex or townhome
 - ◆ N=2
3. Apartment building or condo with 2-4 units
4. Apartment building or condo with 5+ units
5. Mobile home
88. DK

99. REF

◆ N=2

H2. Approximately what is your yearly household income before taxes? Please let me know when I read the category that applies to you. [READ 1 – 8]

1. < \$25,000

2. \$25,000 to \$34,999

3. \$35,000 to \$49,999

4. \$50,000 to \$74,999

◆ N=1

5. \$75,000 to \$99,999

6. \$100,000 to \$149,000

◆ N=1

7. \$150,000 to \$199,000

◆ N=2

8. \$200,000 or more

◆ N=1

88. DK

99. REF

◆ N=2

C.4 Non-Participating Customer Interview Results

To support the process and impact evaluation of Xcel Energy’s Whole Home Efficiency product, the TRC evaluation team conducted in-depth telephone interviews with near-participating customers. The evaluation team defined a near-participating customer as Xcel Energy customers who participated in a home audit in the past three years but did not install any eligible measures. The evaluation team attempted to interview both those customers who signed up for Whole Home Efficiency after their audit and those who did not. We conducted this research to enable us to assess key process and impact evaluation objectives.

Section A: Awareness

A1a. On a scale of 1 to 5, with 1 being “not at all familiar” and 5 being “extremely familiar”, how familiar would you say you are with Xcel Energy’s energy efficiency rebate programs?

◆ 1 (not familiar) (n = 1)

◆ 2 (n = 1)

- ◆ 3 (fairly familiar) (n = 7)
- ◆ 4 (n = 1)
- ◆ 5 (very familiar) (n = 1)
- ◆ Mean = 3
- ◆ Min = 1
- ◆ Max = 5

A1b. And using the same scale, how aware are you of Xcel Energy's rebates for bundling residential energy efficient upgrades at your home through the Home Performance with Energy Star program?

[PROBE] The Home Performance with Energy Star program provides rebates for energy-efficient home upgrades completed by Xcel Energy customers. You receive a rebate for each upgrade you complete, and then a bonus rebate once you complete three upgrades. To be eligible for Whole Home program, customers must first complete an audit through a Home Energy Squad Plus visit or find a qualified, participating trade partner to complete a Home Energy Audit with Blower Door and/or with Infrared.

- ◆ 1 (not familiar) (n = 10)
- ◆ 2 (n = 0)
- ◆ 3 (fairly familiar) (n = 0)
- ◆ 4 (n = 1)
- ◆ 5 (very familiar) (n = 0)
- ◆ Mean = 1.3
- ◆ Min = 1
- ◆ Max = 4

[ASK A2 & A3 if CUSTOMER IS AWARE OF WHOLE HOME EFFICIENCY]

A2. How did you first become aware of the Xcel Energy rebates for bundling residential energy efficiency upgrades?

- ◆ Only one non-participating customer was aware of the Whole Home Efficiency program. The non-participating customer mentioned initially knowing about the program through Xcel's emails, asking customers to sign up for the Whole Home Efficiency program. The customer learned more about the program through Xcel's staff during the process of getting in touch with them.

A3. When you first heard about the Home Performance with Energy Star program, what were your initial perceptions?

- ◆ One customer's initial perception was that it was a great program especially as the customer was thinking of doing equipment upgrades, however found out later that the upgrades were not covered by the program.

Section S: Spillover

S1. In the past year, have you or has anyone in your household made any energy-efficient upgrades or installed any energy efficient equipment in your home? [**PROBE** for heating and cooling equipment, clothes washers or dryers, smart thermostat, air sealing and weather stripping, wall or attic insulation]

- ◆ Yes (n = 8)
- ◆ No (n = 3)

[NOTE: ALL NEAR-PARTICIPATING CUSTOMERS THAT INSTALLED EQUIPMENT THAT COULD QUALIFY FOR WHOLE HOME EFFICIENCY WITHIN THE PAST YEAR WILL BE ASKED SPILLOVER QUESTIONS; ALL OTHERS SKIP TO NEXT SECTION]

[ASK IF S1 = Yes, ELSE SKIP TO B1]

S2. What type of equipment did you install? [**ASK OPEN END, COMPARE TO BELOW LIST OF WHE -ELIGIBLE EQUIPMENT]**

[If type of heat pump is not mentioned, PROBE: Was it a ground source, air source, or mini-split heat pump?]

3. Central air conditioner
4. Evaporative cooler
3. Heat pump
5. Ground source heat pump
6. Air source heat pump/cold climate air source heat pump
7. Mini-split heat pump/cold climate mini-split heat pump
8. Gas furnace (95%+ AFUE)
9. Boiler
10. Tankless water heater
11. Electric heat pump water heater
12. ENERGY STAR clothes washer
13. ENERGY STAR clothes dryer
14. ENERGY STAR smart thermostat (eligible to enroll in AC Rewards)
15. Air sealing and weatherstripping 20% reduction
16. Wall insulation (30% up to cap)
17. Attic insulation (30% up to cap)
18. Other [SPECIFY]

- ◆ Insulation (n = 4)

- ◆ Water Heater (n = 4)
- ◆ Windows (n = 3)
- ◆ Doors (n = 2)
- ◆ Solar (n = 2)
- ◆ Fans (n = 1)
- ◆ Refrigerator (n = 1)
- ◆ Dishwasher (n = 1)
- ◆ Roof (n = 1)
- ◆ Cooler (n = 1)
- ◆ Toilets (n = 1)
- ◆ AC (n = 1)
- ◆ Washer (n = 1)
- ◆ Dryer (n = 1)

[INTERVIEWER NOTE: S3 THROUGH S12 BELOW FORM A LOOP THAT WE GO THROUGH FOR THE FIRST TWO ELIGIBLE EQUIPMENT TYPES. REFER TO RELEVANT RESPONSE FROM S2 AS <Spillover_Measure> FOR EACH ROUND THROUGH THE LOOP.]

S3. Did you receive a rebate through Xcel Energy for installing <Spillover_Measure>?

- ◆ No (n = 3)
- ◆ Unsure (n = 2)
- ◆ Yes (n = 1)
- ◆ Unclear if rebates come from city or Xcel Energy (n = 1)

[ASK IF S3 = NO; IF S3 IS YES, SKIP TO NEXT SPILLOVER MEASURE OR NEXT SECTION]

S4. Are you planning to pursue a rebate for the <Spillover_Measure> in the next 12 months?

- ◆ Yes, will check website (n = 3)
- ◆ Looked around could not find any (n = 1)
- ◆ No, could only qualify for either city or Xcel rebates (n = 1)

[ASK IF S4 = NO; IF YES SKIP TO NEXT SPILLOVER MEASURE OR NEXT SECTION]

S4a. Did the <Spillover_Measure> you installed qualify for an Xcel Energy rebate?

- ◆ One customer said that the measure they installed did not qualify for Xcel rebates as Xcel is not their provider.

[IF S4a = YES]

S4b. Why did you not apply for the rebate for the <Spillover_Measure> you installed?

- ◆ Not aware that rebates are available or if qualified (n = 2)
- ◆ Only qualify for either city or Xcel rebates (n = 1)
- ◆ Time consuming (n = 1)

[IF S4a = NO or DON'T KNOW]

S4c. Would you have considered different equipment when you installed your <Spillover_Measure> if you had known that a rebate for higher efficiency equipment were available?

- ◆ One customer did not think that the audit would have changed what was needed to be done and was unsure of changing providers because there was not that many in the area.

S5. In your own words, can you explain HOW your knowledge of the rebates or resources available through Xcel Energy influenced your decision to install the <Spillover_Measure>?

- ◆ One customer rated the influence a 0 out of 5, saying that it had no influence. The upgrades were already in their mind because their work is around climate change, and they are conscious of energy efficiency. When they bought the house, they knew they needed to do a bunch of stuff. And they live in a town where utilities support energy efficiency, so rebate programs was an encouragement to speed up action. Rebates would just make it easier and change the money side of things but still would pursue this in the absence of rebates.
- ◆ One customer rated the influence a 1 out of 5. The rebates or the resources available didn't play into the customer's decision at all because the rebates were very small.

S6. How influential was any *information or encouragement you received from Xcel Energy* on your decision to install the <Spillover_Measure>? This could include promotional or educational materials or talking to someone at Xcel Energy. Please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "extremely influential."

[INTERVIEWER NOTE: If respondent does not understand the meaning of the "influential" scale, can use alternate scale where 0 = "It did not matter at all" and 10 = "It mattered a great deal".]

- ◆ One customer said that it was not influential, giving a score of 0 out of 10 because the customer had considered doing it again as it just makes sense for them. The customer also felt that the rebate wasn't much compared to the cost of it.
- ◆ One other customer rated the influence a 1 out of 10.

S7. Did you receive any information from contractors or retailers about any Xcel Energy rebates prior to your decision to install the **<Spillover_Measure>**?

- ◆ One customer remembered having conversations about EPIC programs and the loan side of it but not on the rebates. The customer said that maybe contractors mentioned it but there's a gap in his recall because of COVID.

[ASK IF S7 = YES]

S7a. How influential was any *information you received from contractors or retailers* on your decision to install the **<Spillover_Measure>**? Please use a scale from 0 to 10 where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ Not asked/Not applicable

S8. Prior to your decision to install the **<Spillover_Measure>**, did you hear about Xcel Energy programs or rebates through word-of-mouth? This could include talking to someone you know about Xcel Energy's programs or hearing from someone else who had received a rebate from Xcel Energy.

- ◆ Not asked/Not applicable

[ASK IF S8 = YES]

S8a. How influential was this word-of-mouth from people about Xcel Energy's programs on your decision to install the **<Spillover_Measure>**? Please use a scale from 0 to 10 where 0 means “not at all influential” and 10 means “extremely influential.”

[INTERVIEWER NOTE: If respondent does not understand the meaning of the “influential” scale, can use alternate scale where 0 = “It did not matter at all” and 10 = “It mattered a great deal”.]

- ◆ Not asked/Not applicable

S9. Just to make sure that we understand you correctly, please answer the following hypothetical question. If you had NOT known about rebates or resources available through Xcel Energy, would you still have installed the **<Spillover_Measure>**? Please use a scale of 0 to 10, where 0 means you definitely WOULD NOT have installed your energy efficient equipment and 10 means you definitely WOULD have done so.

- ◆ Two customers said that they still would have installed the measures even without Xcel Energy.

S10. How do you know that the **<Spillover_Measure>** you installed was energy efficient? [PROBE for SEER level if heat pump/air conditioner, AFUE if furnace or boiler, ENERGY STAR rating, other efficiency ratings]

- ◆ Not asked/Not applicable

S11. What was the make and model of the <Spillover_Measure>?

- ◆ Not asked/Not applicable

S12. How many <Spillover_Measure>s did you install? **[INTERVIEWER NOTE: if respondent offers a range, insert the midpoint or round up to nearest whole number as needed]**

1. **[RECORD NUMBER]**
88. DK
99. REF

- ◆ Not asked/Not applicable

Section B: Awareness & Perceptions

[ASK ALL]

B1. Next, I'd like to understand a little more about your awareness of energy-efficient options for upgrading your home. Are you aware of things you can do to your home to make it more energy efficient?

- ◆ All eleven non-participants were aware of the things they could do to make their home more energy efficient.

[IF YES] **B1a.** Can you tell me more about what kind of opportunities to make your home more energy efficient you are aware of?

- ◆ Insulation (n = 5)
- ◆ Windows (n = 2)
- ◆ Stove (n = 2)
- ◆ Refrigerator (n = 2)
- ◆ Dishwasher (n = 2)
- ◆ Washer (n = 1)
- ◆ Solar (n = 1)
- ◆ Furnace (n = 1)
- ◆ AC (n = 1)
- ◆ Floors (n = 1)
- ◆ Water heater (n = 1)

B2. What type of equipment would you say you were most familiar with? **[PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]**

- ◆ Furnace (n = 2)
- ◆ Water heater (n = 2)

- ◆ Airflow sealing (n = 1)
 - ◆ Insulation (n = 1)
 - ◆ Lighting (n = 1)
 - ◆ Boiler (n = 1)
- B3.** What type of equipment would you say you were least familiar with? [PROBE: heating and cooling, water heating, clothes washers/dryers, smart thermostats, air sealing and insulation]
- ◆ Heat pumps (n = 3)
 - ◆ AC (n = 1)
 - ◆ Fans (n = 1)
- B4.** Are you interested in making any energy efficient upgrades to your home in the next five years?
- ◆ Yes (n = 9)
 - ◆ Maybe (n = 1)
 - ◆ No (n = 1)
- B4a.** What is the likelihood you would make an energy efficient upgrade at your home in the next five years, on a scale of 1 to 5, where 1 means “not at all likely” and 5 means “extremely likely”?
- ◆ 1 (not likely) (n = 0)
 - ◆ 2 (n = 0)
 - ◆ 3 (fairly likely) (n = 1)
 - ◆ 4 (n = 3)
 - ◆ 5 (very likely) (n = 4)
 - ◆ Mean = 4.4
 - ◆ Min = 3
 - ◆ Max = 5
- [IF B4 = YES]**
- B4b.** What type(s) of upgrade are you considering? [PROBE for equipment type, specifications, efficiency level]
- ◆ Insulation (n = 5)
 - ◆ AC (n = 2)
 - ◆ Fans (n = 2)
 - ◆ Fireplace (n = 1)

- ◆ Lighting (n = 1)
- ◆ Appliances (n = 1)
- ◆ Windows (n = 1)
- ◆ Water heater (n = 1)
- ◆ Dishwasher (n = 1)
- ◆ Refrigerator (n = 1)

B4c. When do you plan to make these upgrades?

- ◆ When asked about the plan to make the upgrades mentioned before, two of the non-participants said that they will upgrade it when it breaks down.
- ◆ Two customers said that they will replace it within a 5-year timeframe.
- ◆ One customer said that they were planning to do them next year, and another one informed us that they were currently doing the upgrades.
- ◆ One customer did not specify the timeframe but did say that it would be down the line.

B4d. What has prevented you from making these upgrades yet?

- ◆ Hard to find contractors (n = 3)
- ◆ Lack of discounts/rebates (n = 3)
- ◆ Budgetary constraints (n = 3)
- ◆ High upfront costs (n = 3)
- ◆ Don't see a reason to replace since it is working properly (n = 2)
- ◆ Timing (n = 1)
- ◆ Don't rely on it as much (n = 1)

[IF B4 = NO]

B4e. What prevents you from making energy efficient upgrades to your home?

- ◆ Not asked

B4f. What changes to the program or to Xcel Energy's offerings would have made it more likely for you to make energy efficient upgrades to your home?

- ◆ Four non-participants mentioned that they struggled finding information.
- ◆ One customer mentioned Xcel's website being challenging to navigate and not user friendly.
- ◆ One customer mentioned increasing the awareness of energy efficient programs to make sure the program is reaching the audience.
- ◆ One customer suggested streamlining the rebate process overall as well as including more information on rebates.

- ◆ One customer also suggested the program to offer rebates for more equipment, and another one wanted a more updated list of contractors on Xcel's website to make sure the contractors listed are eligible through Xcel's programs.

B5. How did you first learn about options for energy efficient upgrades at your home?

- ◆ Self-research (consumer reports, energy efficiency websites, etc.) (n = 5)
- ◆ Other energy efficiency/environmental website (n = 2)
- ◆ Background in environmental (n = 2)
- ◆ Audit (n = 2)
- ◆ Xcel's resources (n = 1)
- ◆ Podcast (n = 1)
- ◆ Social media (n = 1)
- ◆ Word of mouth (n = 1)
- ◆ News (n = 1)

Section C: Decision-Making & Barriers to Participation

C1. We understand you had an energy audit completed at your home in <YEAR>, do you recall participating in that audit?

- ◆ Ten non-participants recall participating in the audit. One participant did not complete this questionnaire.

C1a. Could you briefly walk me through the process of participating in the audit?
[PROBE: Did you receive a report with recommendations for energy efficient upgrades you could make to your home?]

- ◆ Comparing the customers' experiences between the non-participants who did Home Energy Squad and Home Energy Audit, Home Energy Audit customers seemed to describe getting an extra walkthrough of recommendations and recommendation for actions either through the report or through the energy advisor, which Home Energy Squad customers seem to not have received.

C1b. What initially motivated you to complete a home audit through Xcel Energy?

- ◆ Want to understand house condition better (n = 3)
- ◆ Improve house (n = 3)
- ◆ Environmental reasons (n = 3)
- ◆ Increase comfort (n = 2)
- ◆ Save/reduce energy use (n = 2)
- ◆ Improve efficiency (n = 2)
- ◆ Reduce energy bill (n = 1)

- ◆ Decrease cost of owning home (n = 1)
- ◆ City requirement in order to get rebates (n = 1)
- ◆ Be a model to neighbors (n = 1)
- ◆ Familiarity with past energy audits/energy efficiency (n = 1)
- ◆ Encouragement from people (n = 1)
- ◆ Found it interesting (n = 1)

C1c. Do you recall the auditor or energy advisor mentioning the rebates that were available for energy efficient upgrades through Xcel Energy? [PROBE for timing when rebates were mentioned]

- ◆ Yes (n = 7)
- ◆ No (n = 1)
- ◆ Don't recall (n = 1)

[ASK C2-C2c IF CUSTOMER IS AWARE OF WHOLE HOME EFFICIENCY]

C2. Do you recall the auditor or energy advisor mentioning Xcel Energy's Home Performance with Energy Star program, where you receive rebates for making energy efficient upgrades and a bonus rebate once you complete three upgrades?

- ◆ No (n = 3)
- ◆ Not sure (n = 2)

[IF C2 = YES]

C2a. At what point in the audit process did the auditor or energy advisor mention the availability of the Whole Home Energy rebate program?

- ◆ Not asked

C2b. Had you heard of the rebates available through the Home Performance with Energy Star program before completing your home energy audit? If yes, how did you hear of it?

- ◆ Not asked

[IF C2 = NO]

C2c. Have you heard of Home Performance with Energy Star since completing your audit?

If so, how did you hear about it? [PROBE for email advertisement, web search]

- ◆ One non-participant knew about the program from email.

[ASK C3 IF CUSTOMER SIGNED UP FOR WHE]

C3. Do you recall signing up for the Home Performance with Energy Star program after completing your home energy audit?

- ◆ Not asked

[IF C3 = Yes]

C3a. What initially motivated you to sign up for the Home Performance with Energy Star program?

◆ Not asked

C3b. How did you sign up for the program? [**PROBE** for through an auditor, through the website form, called Xcel Energy to sign up, etc.]

◆ Not asked

C3c. When you were deciding whether or not to sign up for the Home Performance with Energy Star program, did you have any hesitations or concerns? If yes, what were those?

◆ Not asked

[ASK C4-C6 IF SIGNUP = NO BUT CUSTOMER IS AWARE OF WHOLE HOME EFFICIENCY]

C4. What factors did you consider when deciding whether to sign up for Home Performance with Energy Star?

◆ Not asked/Not applicable

C5. What prevented you from deciding to sign up for Home Performance with Energy Star?

◆ One customer did not find the program useful because the upgrades that the customer wanted to do were not part of the program.

C6. Is there anything that would have made it more likely for you to sign up for Home Performance with Energy Star?

◆ One customer who knew about the program but did not sign-up wished that the program offered more equipment types for rebates.

◆ One customer who was not aware of the program was really happy to know about the program and would be interested in it given the benefits. The customer was thrilled with Xcel Energy as they recognized the benefit in encouraging conservation among users. However, some of the barriers mentioned were knowing the project that they would want to take-on for the house, cost, and money. The customer also mentioned the timeframe to participate in the program potentially being a barrier but could not recall when he had his audit.

[ASK ALL]

C7. Next, I'm going to read you a list of factors that could have been a challenge for you to participate in Xcel Energy's Home Performance with Energy Star rebate program.

On a scale from 1 to 5, where 1 is "not at all a challenge" and 5 is "very much a challenge", please indicate the extent to which you see the following as a challenge to participating in Xcel Energy's Home Performance with Energy Star rebate program.

You can also tell me if something was not applicable to your experience or if you don't know.

[RANDOMIZE ORDER, ANCHOR C15j LAST]

C7a. Lack of knowledge regarding energy efficient equipment

- ◆ 1 (not challenging) (n = 5)
- ◆ 2 (n = 2)
- ◆ 3 (fairly challenging) (n = 2)
- ◆ 4 (n = 2)
- ◆ 5 (very challenging) (n = 0)
- ◆ Mean = 2.1
- ◆ Min = 1
- ◆ Max = 4
- ◆ Seven respondents knew how to find information about energy efficient equipment they are interested in, with five rating it a 1 out of 5 and two rating it a 2 out of 5.
- ◆ One of the non-participants said that they are pretty knowledgeable about energy efficient equipment but thought it was difficult to find the information.

C7b. Lack of knowledge regarding rebate amounts

- ◆ 1 (not challenging) (n = 0)
- ◆ 2 (n = 5)
- ◆ 3 (fairly challenging) (n = 3)
- ◆ 4 (n = 3)
- ◆ 5 (very challenging) (n = 0)
- ◆ Mean = 2.9
- ◆ Min = 2
- ◆ Max = 4
- ◆ Five non-participants felt that the lack of knowledge regarding rebate amounts are not that much of a challenge, rating it a 2 out of 5.
- ◆ Three non-participants rated lack of knowledge as a challenge 3 and three non-participants rated it a 4, which meant that they found it challenging. Reasons that it is challenging mentioned by non-participants were that it takes some time to find information, that it's not very clear and it may take a few calls to get information.

C7c. Amount of time it takes to install equipment

- ◆ 1 (not challenging) (n = 2)
- ◆ 2 (n = 2)

- ◆ 3 (fairly challenging) (n = 3)
- ◆ 4 (n = 3)
- ◆ 5 (very challenging) (n = 1)
- ◆ Mean = 2.9
- ◆ Min = 1
- ◆ Max = 5
- ◆ Four non-participants felt that the amount of time it takes to install equipment is not much of a challenge, with two customers rating it a 1 out of 5 and two customers rating it a 2 out of 5.
- ◆ Three non-participants rated it a 3, three non-participants rated it a 4 and one rated it a 5, indicating that they found it challenging. Reasons mentioned by non-participants were that it used to only be a couple of weeks to install equipment but now it takes a couple of months, which may be caused by supply chain issues due to the pandemic.

C7d. Finding a qualified contractor to perform equipment installations

- ◆ 1 (not challenging) (n = 2)
- ◆ 2 (n = 1)
- ◆ 3 (fairly challenging) (n = 2)
- ◆ 4 (n = 3)
- ◆ 5 (very challenging) (n = 3)
- ◆ Mean = 3.4
- ◆ Min = 1
- ◆ Max = 5
- ◆ Three non-participants felt that finding a qualified contractor is not that much of a challenge, with two customers rating it a 1 out of 5 and one customer rating it a 2 out of 5.
- ◆ Two non-participants rated it a 3, three non-participants rated it a 4 and three rated it a 5, which meant that they found it challenging. Reasons mentioned by non-participants for why it was challenges included scheduling a time that works as contractors are super busy, contractors' schedules all being booked out and finding someone who could do a good job.

C7e. Your preferred contractor does not offer the rebates

- ◆ 1 (not challenging) (n = 1)
- ◆ 2 (n = 3)
- ◆ 3 (fairly challenging) (n = 1)
- ◆ 4 (n = 2)

- ◆ 5 (very challenging) (n = 1)
- ◆ N/A (n = 2)
- ◆ Mean = 2.9
- ◆ Min = 1
- ◆ Max = 5
- ◆ Four non-participants felt that their preferred contractor not offering rebates was not that much of a challenge, with one customer rating it a 1 out of 5 and three customer rating it a 2 out of 5. Customers said that rebates are nice but they're only a few percent of the equipment cost so it would not change anything much.
- ◆ One non-participant rated it this challenge a 3, two non-participants rated it a 4 and one rated it a 5, which meant that they found it challenging. One customer mentioned only having one contractor available that Xcel Energy recommended but their preferred contractor was not a qualified contractor yet.
- ◆ Two non-participants did not answer the question because they do not have a preferred contractor.

C7f. Amount of paperwork

- ◆ 1 (not challenging) (n = 1)
- ◆ 2 (n = 7)
- ◆ 3 (fairly challenging) (n = 1)
- ◆ 4 (n = 1)
- ◆ 5 (very challenging) (n = 0)
- ◆ N/A (n = 1)
- ◆ Mean = 2.3
- ◆ Min = 1
- ◆ Max = 4
- ◆ Eight non-participants felt that the amount of paperwork was not very challenging, with one customer rating it a 1 out of 5 and seven customers rating it a 2 out of 5. Customers said that it was easy and instant and that it didn't bother them that much.
- ◆ One non-participant rated it a 3 and one non-participant rated it a 4, which meant that they found it somewhat challenging. Two customers mentioned that if they were to do the paperwork themselves that it would be quite challenging as it did not seem to clearly describe what they're supposed to do – for example, figuring the process, how it works, whether the information should come from the contractor or from them, etc.
- ◆ One non-participant did not answer the question because the customer has never done any paperwork for rebates.

C7g. Equipment cost

- ◆ 1 (not challenging) (n = 1)
- ◆ 2 (n = 0)
- ◆ 3 (fairly challenging) (n = 2)
- ◆ 4 (n = 5)
- ◆ 5 (very challenging) (n = 3)
- ◆ Mean = 3.8
- ◆ Min = 1
- ◆ Max = 5
- ◆ Only one non-participant felt that the equipment cost was not that a challenge, rating it a 1 out of 5.
- ◆ Two non-participants rated it a 3, five non-participants rated it 4 and three non-participants rated it a 5 out of 5, which meant that most found it challenging. Common reasons provided for why this was challenging include the expensive cost of equipment, especially if they need to make a lot of upgrades. Several felt the upfront costs of these equipment could be a barrier.

C7h. Installation cost

- ◆ 1 (not challenging) (n = 2)
- ◆ 2 (n = 1)
- ◆ 3 (fairly challenging) (n = 2)
- ◆ 4 (n = 3)
- ◆ 5 (very challenging) (n = 3)
- ◆ Mean = 3.3
- ◆ Min = 1
- ◆ Max = 5
- ◆ Three non-participants felt that the installation cost was not that much of a challenge, with two customers rating it a 1 out of 5 and one customer rating it a 2 out of 5.
- ◆ Two non-participants rated it a 3, three non-participants rated it 4 and three non-participants rated it a 5 out of 5, which meant that they found it challenging. One customer mentioned that the cost varies depending on the type of equipment, and one other customer mentioned that they had no idea that it would be so expensive.

C7i. Completing your recommended energy efficient projects within the two years after your audit

- ◆ 1 (not challenging) (n = 1)
- ◆ 2 (n = 2)
- ◆ 3 (fairly challenging) (n = 1)

- ◆ 4 (n = 2)
- ◆ 5 (very challenging) (n = 4)
- ◆ Mean = 3.7
- ◆ Min = 1
- ◆ Max = 5
- ◆ Three non-participants felt that completing the projects within two years was not much of a challenge, with one customer rating it a 1 out of 5 and two customers rating it a 2 out of 5.
- ◆ One non-participant rated it a 3, two non-participants rated it 4 and four non-participants rated it a 5 out of 5, which meant that they thought it would be somewhat challenging. Some non-participants felt that two years is too little time to do big projects, given the time and money.

C7j. Is there any other factor that you see as a challenge to participating in Xcel Energy's energy efficiency rebate program?

- ◆ Time (n = 1)
- ◆ Equipment customers are interested is not currently part of program (n = 1)
- ◆ Awareness that these programs exist (n = 1)

[ASK IF C7j = YES]

C7k. On a scale from 1 to 5, where 1 is "not at all a challenge" and 5 is "very much a challenge", please indicate the extent to which you see **<C7j factor>** as a challenge to participating in Xcel Energy's energy efficiency rebate program.

- ◆ Not asked

C8. Through which channels do you generally prefer to receive information from Xcel Energy about saving energy at your home?

- ◆ Emails (n = 7)
- ◆ Calls (n = 2)
- ◆ E-bill/bill-insert (n = 2)
- ◆ Texts (n = 1)
- ◆ Website (n = 1)

C.5 Participating Trade Partner Interview Results

To support the process and impact evaluation of the 2022 Xcel Energy efficiency products, members of the TRC evaluation team conducted in-depth telephone interviews with participating trade partners. This section presents the results from the questions covered in the in-depth interviews of customers who have participated in the Colorado Whole Home Efficiency product.

Section F: Background & Product Familiarity

- F1.** How long have you been in your current role? **[IF < 5 YEARS]** What was your previous role? **[PROBE TO MAKE SURE WE ARE TALKING TO: Owner, Sales Manager, Salesperson]**
- ◆ Trade partner (TP) 1 was the business owner.
 - ◆ TP 2 was a manager who had been in the organization for 10 years.
 - ◆ TP 3 was the business owner and was hands-on running the whole company, acting as the hiring manager, website builder, training, energy auditor, was a BPI certified proctor for the exam, and did installation during labor shortage.
- F2.** Can you describe how much involvement you typically have with the Whole Home Efficiency (previously Home Performance with Energy Star) rebate program? This would include interaction with Xcel Energy staff, interaction with program administrator (implementer), marketing rebates to customers, installing equipment, filling out program paperwork, providing invoices, or fulfilling other requirements.
- ◆ TP1 has been actively involved with Whole Home Efficiency as the contractor since 1998 with NREL (previously called Home Performance with ENERGY STAR), then Xcel Energy came in 2002 for Whole Home Efficiency (around 20 years).
 - ◆ TP2 does not actively market the program and stated that the customers have to mention the rebate so they can add the work in the proposal. Many of their customers go through audit program, so mostly the customers have conversation with auditor to discuss relevant programs.
 - ◆ TP3 did not have significant participation with the program recently, the last time was more than a year ago.
- F3.** How long has your company participated in the Home Performance with Energy Star/Whole Home Efficiency program?
- ◆ TP1 has been actively involved with Whole Home Efficiency as the contractor since 1998 with NREL, then Xcel Energy came in 2002 for Whole Home Efficiency. (Around 20 years).
 - ◆ TP2 has participating in the program since 2015 (around 6 years)
- F4.** Does your company perform Whole Home Efficiency-eligible audits (Home Energy Audit with Blower Door or Infrared?)
- ◆ TP1 does not perform audits, but it is done by a relative's company. TP1 was concerned that not many auditors have the ability to perform the correct audit, especially for wall insulation.
 - ◆ TP2 performs audits.
 - ◆ TP3 performs audits.

Section B: Barriers/Motivations for Trade Partners

- B1.** Just to make sure we are talking the same language; the Whole Home Efficiency program offers rebates for residential energy efficiency improvements and a bonus rebate once the customer completes three projects. It is separate from the standalone rebate program that

Xcel Energy offers for insulation projects. Please note that we aren't talking about minimum and maximum insulation or air sealing program requirements in this survey because the Whole Home Efficiency program mirrors the standalone program requirements.

B1a. How do your customers learn about the Whole Home Efficiency program? [**PROBE:** through the audit, an energy advisor, or through a trade partner (other than the auditor)?]

- ◆ TP1 and TP3 inform the customers about the program.
- ◆ TP2 expected customers to learn about the program through the audit process and tell the trade partner when they want to participate.

B2. What do you see as the major differences between Whole Home Efficiency program and the standalone insulation program? Do you find it more or less challenging to participate in Whole Home Efficiency than the standalone insulation program? Why?

- ◆ TP1 said they might not be insured to complete all the projects that qualify for Whole Home Efficiency. Sometimes they do not recommend it because Xcel Energy does not provide a rebate through the program for all wall insulation projects.
- ◆ TP2 usually only qualifies for 2 out of 3 measures. They have no urge to motivate customers to complete 3 or more measures – the TP would do the standalone rebates instead of WHE.

B3. What is the main reason you pursue rebates through Xcel Energy's Whole Home Efficiency rebate program?

- ◆ TP1's motivation was to pursue rebates for customers, make customers' homes more energy efficient and do it right.
- ◆ TP2's motivation was to help customers to use less energy and be more comfortable.
- ◆ TP3's motivation was the \$100 trade partner incentive and supporting customers in getting as many rebates as they're entitled to.

B3a. Why do you think your customers choose to participate in the Whole Home Efficiency program?

- ◆ Interested in improving the comfort of certain home space (n=1).
- ◆ Environmentally-aware – have done research/reading on energy efficiency topic (n=2).
- ◆ Reduce energy bill (n=1).
- ◆ Program rebate (n=2)

B4. What, if anything, about the Whole Home Efficiency rebate program keeps you from participating more? [**PROBE:** external factors e.g., housing market, new construction; internal factors e.g., collaboration with different trade partners, engagement with Xcel Energy or program administrator]

B4a. Are there any barriers particular to the Whole Home Efficiency program, that you do not experience in the standalone program? What are those barriers?

- ◆ Trad partner has limited offering of services that are program-eligible (n=2).
- ◆ No perceived benefits for collaborating with other contractors (or promoting other contractor's services (n=1).
- ◆ Difficult to explain the program to customers (n=2).
- ◆ Already busy with other projects (n=1).
- ◆ Confusing rebate application (n=2).
- ◆ No perceived benefits for educating customers about maximizing the program rebates (n=1).

B4b. What, if any, barriers do your customers experience to participating in the program?

- ◆ Lack of program marketing – Confusion around name change (n=1).
- ◆ The rebate amount is not significant (compared to the total project cost) (n=1)
- ◆ Miscommunication about program requirements (e.g., initial assessment) (n=1)
- ◆ Customers already have some of or all the eligible measures (n=1).
- ◆ Program name changed /confusion around name change (n=1)
- ◆ Limited budget for home improvement (n=1)

B4c. Do you ever experience any barriers to participation caused by the requirement for completing an audit prior to participation? If yes, what are those barriers?

- ◆ Yes (n=2)
 - ◇ One TP said that it's confusing for customers and hard to explain, especially when customers do not mention that they want to participate prior to installing equipment and then they have to explain that they're not eligible (because they have not had an audit).
 - ◇ One TP said he uses the audit as a test to see if they customers have enough budget to actual install the recommendations, assuming if they do not have the money to the do the audit, they do not have the money to do the upgrades.

Section I: Product Influence on the Market

Next, I have some questions about the relative importance of the Xcel Energy offering in your recommendation to pursue high efficiency measures with your customers.

I1. How would you describe the influence that the Whole Home Efficiency rebate program has on your decision to recommend [wall insulation with a post-job R-value of 13 or greater/attic insulation with a post-job R-value of 49 or greater] to your customers?

- ◆ All TPs felt that they were not strongly influenced by the product. They're mostly recommending based on what needs to be done regardless of the rebate.

I1a. How has that changed in 2022, if at all?

- ◆ Participation has decreased for all TP in 2022.

Now, we are going to talk through two scenarios to understand how they impact the type of insulation you sell.

SCENARIO 1: STATUS QUO

I2. First, thinking about the current market,

I2a. About what percent of wall insulation projects you complete have a post-job R-value of 13 or greater?

I2b. About what percent of attic insulation projects you complete have a post-job R-value of 49 or greater?

I2c. For about what percent of your customers do you complete multiple projects (for example, wall insulation and attic insulation)?

- ◆ No TPs were able to give clear percentages.
- ◆ TP 1 said that 70% homes in CO area do not have wall insulation but need it. Wall insulation for wall that have no existing insulation are not rebate eligible, but there are not many contractors in the area who know how to perform wall insulation. They were interested in the eligibility for wall insulation to be updated to include those projects.

SCENARIO 2: NO REBATE PROGRAM

I3. Now imagine that the Xcel Energy Whole Home rebate program were not available today, and you were not able to offer Whole Home rebates for attic or roof insulation or have any program support.

I3a. About what percent of wall insulation projects you complete would have a post-job R-value of 13 or greater? About what percent of attic insulation projects you complete have a post-job R-value of 49 or greater?

I3b. How often would you complete multiple energy efficient upgrades for one customer?

I3c. What effects would this have on your business? [**PROBE:** employees, sales techniques, number of clients, time it takes to sell projects]

- ◆ All trade partners felt that if the program did not exist, it would not change the way they operate their business.
 - ◇ One TP said that the rebate is “just a bonus” and that they have a lot of repeat customers and have been in business for a long time.
 - ◇ One TP said that they always bundle air sealing and insulation (2 measures) and that not 100% of projects go through the standalone product but close to it.

[INTERVIEWER NOTE: CHECK FOR CONSISTENCY IN RESPONSES. SEEK CLARITY AS NEEDED.]

[ASK IF TIME AVAILABLE]

- I4.** Do you do any work for customers served by another utility? In what regions? About what percent of the insulation you install in this region would qualify for Whole Home Efficiency? For about what percent of customers in this region do you complete multiple projects (for example, wall insulation and attic insulation)?
- ◆ Not asked
- I5.** Have you changed the way you sell projects or conduct business because of the rebates available through Whole Home Efficiency?
- ◆ Not asked

Section S: Satisfaction & Product Experiences

Now, I'd like to talk more specifically about your experiences with the Whole Home Efficiency rebate program.

[ASK S1 IF NOT ALREADY DISCUSSED]

- S1.** How long have you participated in the Whole Home Efficiency program through Xcel Energy?
- S1a.** Has your company's involvement with the product increased, decreased, or stayed the same over time? **[PROBE: Would you say the number of Whole Home rebate-eligible projects your customer has completed has increased, decreased or stayed the same?]**
- S1b.** Why has your company's involvement with the product changed?
- ◆ All trade partners have experienced significant decrease in product participation for the same reasons provided in previous questions.
- S2.** In 2020, the program changed to no longer require that customers complete an insulation project to be eligible for Whole Home Efficiency. What were your perceptions of this change?
- S2a.** How has this change to the program caused you to participate in the program differently?
- ◆ All three trade partners were unaware of the change.
 - ◇ When the change was described, TP 3 said "It's silly - it's the most cost-effective and low hanging fruit. It's one thing that can help the home perform better. If they have to get 3 things done, and they already have smart thermostat, they don't really have the 3rd option."
- S3.** Were there any other program changes that impacted your participation?
- S3a.** If yes, what are the changes?
- S3b.** If yes, what are your perception of these changes? **[PROBE] Have these changes made the program easier to participate in, harder to participate in,**

or stayed about the same? (Possibly ask to be more specific, e.g., percent change)

- ◆ No responses
- S4.** What interactions do you have with the program administrator? [**PROBE** for support received from program administrator, positive or negative interactions with program administrator, any additional support desired]
 - ◆ No TP recalled working with the program administrator.
 - ◇ TP 1 said they would like to see more communication with the program administrator.
 - ◇ TP 3 said “I don't recall working with [program administrator]. The audit that they offer is not good quality, because most of it is boilerplate and they don't recommend things that are safe, such as putting a chimney balloon and a gas fireplace, and that could kill everyone in the house. They almost always recommend cellulose insulation, which I don't like to work with. [The program administrator] has a bias.
- S5.** Next, I'd like to ask you about your satisfaction with several elements of the Whole Home Efficiency program. Using a scale from 1 to 5, where 1 is “extremely dissatisfied” and 5 is “extremely satisfied”, please rate your satisfaction with the following items:

[ASK IF S5a-j < 5]

S5_1. Why were you dissatisfied with this component [Why did you provide that response?]

S5_2. What could Xcel Energy do to increase your satisfaction with the Whole Home Efficiency program? [**PROBE: as needed for specific factor**]

S5a. Your overall satisfaction with the Whole Home Efficiency program?

- ◆ 1 (n=1)
 - ◇ One TP is not at all happy with the way the program is right now because customers lack awareness, and they don't recognize it by the new name: “they could care less.” With the “other program”, the felt like they were doing something.
- ◆ 3 (n=1)
 - ◇ One TP felt there was not a lot of benefit that incentivizes his to participating in the program.
- ◆ 5 (n=5)
 - ◇ TP 1 rated the program a 5%.

S5b. The Whole Home Efficiency staff from Xcel Energy? (Not from the program administrator)

- ◆ 1.5 (n=1)
- ◆ 4 (n=1)

- ◇ TP 2 said that if they have any questions for Xcel Energy, they are usually very responsive.
- ◆ 5 (n=1)
 - ◇ TP 3 said they did not ask for help often.
- ◆ TP 1 gave out a score of 25% which is 1.25 out of 5. The TP felt like they're missing reviews of people that have gone in and redone the walls. The TP mentioned that it's something that Xcel have to realize that it makes a huge difference.
- S5c.** The size of the Xcel Energy Whole Home Efficiency rebates received after completing each project. [**PROBE:** How does your satisfaction compare with rebates received for similar projects through the standalone insulation program?]
- ◆ 1.5 (n=1)
 - ◇ TP 1 said that the rebates are getting relatively smaller and smaller as the material costs are going up.
- ◆ 2 or 3 (n=1)
 - ◇ TP 2 also mentioned that the rebates are minimal compared to what people spend - looking from a customer point of view. TP 2 stated that not that it's not motivating, it is still better than nothing. The TP felt that the Home Performance rebates could be more because it requires three items instead of two.
- ◆ 3 (n=1)
 - ◇ TP 3 felt that the rebates would need to increase to motivate him to get over the product's participation hurdles, unless other incentives can be made, like adding LEDs back to the program.
- S5d.** The size of the Xcel Energy Whole Home Efficiency bonus rebate, received after the customer completes three projects
- ◆ 1 (n=1)
 - ◇ The TP said that it could be worded differently because the structure of the bonus rebate is confusing to the customers. "Customers don't come out ahead at all, by doing an energy audit compared to that 10%."
- ◆ 2 (n=1)
- ◆ [One respondent provided a qualitative response] TP 2 said that it is "really good."
 - ◇ Would like the program to add evaporative cooling to the program.
- S5e.** The process for completing Whole Home rebate applications. [**PROBE:** How does your satisfaction compare with the applications completed for similar projects through the standalone insulation program?]
- ◆ 4 (n=2)
 - ◇ TP 1 said "it was relatively easy to do."
 - ◇ TP 1 said their satisfaction about the process with WHE compared to Home Performance with ENERGY STAR is the same.
 - ◇ TP 3 has not gone through the process of using the online application yet.

- ◆ One respondent was not asked this question.
S5f. Program administrator’s communication with you
- ◆ Two respondents provided qualitative answers:
 - ◇ One respondent said that the [program administrator] needs to have more training sessions for rebate. For example, if the TP hires a new rebate person, they would like to send them down to [the program administrator] and hope they can teach them how to do the rebates to make sure they get everything done exactly how Xcel Energy requires.
 - ◇ One respondent said that there was not much communication, just emails. This respondent said there had been no communication in quite a while. If there are questions regarding the program, the trade partner would call the program staff from Xcel Energy, not [the program administrator].
- ◆ 3 (n=1)
S5g. Program administrator’s ability to answer your questions
- ◆ Not asked/Not applicable
S5h. Program administrator’s knowledge of program rules
- ◆ Not asked/Not applicable
S5i. Program administrator’s help with rebate applications in progress
- ◆ Not asked/Not applicable
S5j. Quality of program administrator’s inspections and feedback
- ◆ 4 (n=1)
 - ◇ One respondent felt that the program administrator had a bias for fiberglass insulation, which they did not agree with. They also felt that the program administrator does not look at wall insulation as being important: “The walls are as important as the attic, they’re just not looking at it that way. And they need to be reeducated.”
- ◆ 4 (n=1)
- ◆ One respondent did not provide a response.
- S6.** What is the Whole Home Efficiency program doing well that they should keep doing?
 - ◆ Not asked
- S7.** What can Xcel Energy do to increase your participation in the Whole Home rebate program?
 - S7a.** Do you feel the trade partner incentive amounts are sufficient to motivate trade partners to participate in the program?
 - S7b.** Are there any specific changes to the program rules that would motivate you to participate more frequently in the program?
PROBE for:
Audit prerequisite

Two-year window to complete three improvements.

Top three improvements in audit

- ◆ Not asked – Answered through other questions.

S8. What other challenges, if any, have you experienced participating in the Whole Home rebate program, that you have not mentioned? **[PROBE FOR DETAILS]**

- ◆ No additional challenges provided.

S9. Are you ever required to work with contractors from other specialties (like HVAC) to help your customer complete all three upgrades required by the program?

[PROBE: Have you reached out to other contractors on behalf of customer?]

- ◆ Not asked, but responses to other questions indicate that contractors would need to work with contractors from other specialties to complete a third upgrade, but they do not often do this.

[IF S9 = YES]

S9a. Please tell me about situations where you have to work with other contractors from different specialties.

- What do you see as the benefits to working with other contractors?
- What challenges have you experienced (if any) when working with other contractors?
- What kinds of support did you receive from the program staff or program administrator (CLEARResult)?
- ◆ One TP did not know other non-insulation contractors that they felt were aware/understanding of insulation. They were aware of one HVAC contractor that measures windows to figure out their calculations. Everybody else is kind of guessing.
- ◆ One TP said that it would be helpful for Xcel Energy to provide education to office managers as well, not just contractors, “so they know how to interact with the rebate for Home Performance.”

S9b. How often do your customers talk to you about Xcel Energy’s energy advisors’ recommendations?

- ◆ One TP said they never heard about energy advisor recommendations from any of their customers.
- ◆ Two TP did not provide responses, but other responses indicate that they did not work with or hear from energy advisors.

S9c. When do you talk with the energy advisors?

- ◆ Not asked due to time constraints and responses to previous questions.

S10. Next, I’m going to ask you to rate a series of tasks associated with the Xcel Energy Whole Home Efficiency product. How difficult or easy would you say it was to complete the following tasks on a scale from 1 to 5, where 1 is “extremely difficult” and 5 is “extremely easy”?

[ONLY LIST APPLICABLE ITEMS]

S10a. Become a qualified trade partner for the Whole Home Efficiency program

- ◆ S10 series not asked due to time constraints
 - S10b.** Complete Whole Home Efficiency rebate forms (to apply for the rebate – post installation)
- ◆ Not asked
 - S10c.** Submit Whole Home Efficiency rebate forms
- ◆ Not asked
 - S10d.** Determine a measure's program eligibility
- ◆ Not asked
 - S10e.** Meet the Whole Home Efficiency program deadlines
- ◆ Not asked
 - S10f.** Get in touch with an Xcel Energy representative
- ◆ Not asked

[ASK FOR ANY S10 ANSWERS IF < 4]

S11. What are the reasons why it wasn't easy?

- ◆ Not asked/Not applicable

Section M: Trade Partner Marketing

Now, I have some questions about customer motivations and how you sell Whole Home Efficiency improvements to customers.

M1. What tools or resources from Xcel Energy have you found to be the most helpful in selling attic or wall insulation? (PROBE: for example, the Rebate Summary Sheet, the Xcel Energy website, the Energy Expert services)

- ◆ TP 2 said that word of mouth has been most helpful since a lot of referrals came from people that had already gotten proposals from the TP. Not many customers come through Xcel Energy. Sometimes people find the TP through Xcel Energy and these customers are expected to be a bit educated about the rebates. The owner also talks about the rebate onsite.
- ◆ 2 respondents did not provide answers.

M1a. What challenges in using these tools or resources?

- ◆ Not asked

[IF TRADE PARTNER DOES NOT CONDUCT AUDITS]

M2. Typically, do your customers come to you having already completed a Home Energy Audit or Home Energy Squad Visit? Do you ever have to direct your customers towards an auditor in order to participate?

- ◆ Not asked, in other questions one TP said that the audit requirement was difficult because many times, the customer comes to them without having completed the audit,

and if they do not complete it, the TP cannot help them receive the Whole Home Efficiency rebate.

M3. For customers who are not already aware of the program, do you promote the Whole Home Efficiency program with your customers? If so: How? How do you identify customers who are better candidates for the rebates?

- ◆ TP 1 said that they do promote the product [but unclear whether she was describing Whole Home Efficiency or insulation rebates from Xcel Energy generally]
 - ◇ This TP also said they compete for customers with the Energy Efficient Building Coalition. TP 1 also educates customers on different insulation materials, what's good about one or another and provides them the results.
 - ◇ The TP does radio advertising.
- ◆ TP 2 said that they don't really promote the product but acknowledge that this is one of trade partner's "weak areas", as they don't do a lot of advertising.
- ◆ One TP did not provide a response but has responded in previous questions – does not currently promote the product.

M3a. What do you do to encourage customers to install multiple projects to get the bonus rebate?

- ◆ Not asked

M4. Have you ever sold multiple Whole Home Efficiency-eligible insulation projects to Xcel Energy residential customers without submitting an application for the Whole Home rebate?

- ◆ Not asked due to time
- ◆ From other questions, TPs often submit applications through the standalone program.

[ASK NEXT THREE QUESTIONS IF M3 = YES]

M4a. How frequently does this happen?

- ◆ Not asked

M4b. What are the reasons why?

- ◆ Not asked

M4c. What would need to change for you to submit applications for these projects?

[PROBE: Is there anything Xcel Energy could do to help ensure applications are submitted for all eligible projects?]

- ◆ Not asked – similar question/answers provided in previous questions

M5. What could the Whole Home Efficiency program staff do to encourage:

M5a. More customers to participate?

[IF NOT ALREADY COVERED]

M5b. More trade partners to participate?

- ◆ TP 1 said that customers were not happy with the name change. They felt the name change had major impact on their participation: “There’s not enough advertising to promote it. It’s not a name brand out there.” They felt the ENERGY STAR name had more credibility.
- M6.** Are you aware of any new or emerging insulation technologies on the market that Whole Home Efficiency should include in the program?
- ◆ Not asked
 - ◆ One TP has consistently described their approach to wall insulation as being innovative.
- M6a.** Do you interact with other types of trades/contractors on projects? If so, with which types of trades do you typically work? [**PROBE:** Do you think that any of the work these trades complete could be an energy efficiency opportunity? (e.g., HVAC installers)]
- ◆ Not asked – Answered in previous questions (S9)
- M7.** The program is currently considering implementing a pay-for-performance model for calculating the Whole Home rebates provided for insulation projects, based on baseline R values. Incentives for insulation would be determined based on the customers’ pre- and post-improvement R values, rather than a prescriptive incentive based on the cost of materials and labor. This would differ from how incentives are calculated for the stand-alone insulation program available through Xcel Energy. What are your perceptions of this potential change?
- ◆ One TP said that if implemented, their company would “blow everybody out of the water” because their wall insulation technique is so effective. This TP indicated that NREL used them to redo the national standards 4 years ago because their results were so much higher than everybody else’s. This trade partner felt that pay-for-performance would be a good idea, but they need to have more BPI training.

CLOSING

- CLOSE1.** Is there anything we didn’t cover that you’d like to mention or discuss about your experiences working with the Whole Home rebate program?
- ◆ One TP said that they should have more education on TV because customers need to learn more of the program. They said Xcel Energy could also advertise more in the mountains and rural areas, especially because propane is so expensive right now and often used in the mountains.

C.6 Nonparticipating Trade Partner Interview Results

To support the process and impact evaluation of the 2022 Xcel Energy Whole Home Efficiency product, members of the TRC evaluation team conducted in-depth telephone interviews with non-participating trade partners. This guide presents the questions covered in the in-depth interviews of trade partners who had never participated or previously participated in the Colorado residential Whole Home Efficiency product.

Section F: Background and Program Familiarity

F1. How long have you been in your current role? **[IF < 5 YEARS]** What was your previous role?

[PROBE: Owner, Sales Manager, Engineer, Contractor, Field Technician, Project Manager, etc.]

- ◆ Owner (n = 2)
- ◆ Contractor (n = 1)
- ◆ General manager (n = 1)
- ◆ Rebate processor (n = 1)
- ◆ VP of operations (n = 1)
- ◆ Min: 2.5 years
- ◆ Max: 20 years

[ASK IF TIME PERMITS]

F2. What Xcel Energy programs have you participated in previously?

- ◆ One TP does standalone Xcel Energy programs.
- ◆ One TP did work for [another company] before, so they are familiar with the rebate programs and have worked with the program and team for close to 7 years.

Section P: Perceptions/Awareness: Whole Home Efficiency Program

[ASK ALL]

P1. How familiar are you with the Xcel Energy's Whole Home Efficiency program (previously named Home Performance with Energy Star)? **[PROBE:** As you probably recall, this is a program offered by Xcel Energy that provides rebates for energy efficient upgrades made at a customer's home. When the customer makes three upgrades, they receive a bonus rebate. Every customer is required to have an audit completed at their home before they are eligible to participate]

- ◆ Familiar with it, but have not participated recently (n = 4)
- ◆ Familiar with the program (n = 2)
- ◆ Have heard of the program (n = 3)
- ◆ Not familiar (n = 2)

P2. What were your perceptions of the Whole Home Efficiency program when you first heard of the program?

[PROBE] What did you perceive as the value to customers offered through the Whole Home Efficiency Program?

[PROBE] What did you perceive as the value to your business, offered through the Whole Home Efficiency Program?

[PROBE] Have your perceptions of the program changed at all, since you first heard of it?

- ◆ Rebates are a nice selling point/improves rebates for customers (n = 3)
- ◆ Rebates are not substantial enough to motivate customers (n = 1)
- ◆ Better use of natural resources (n = 1)
- ◆ Difficult to do all 3 projects with customers (n = 1)
- ◆ Customers might have to do some work to find different contractors (n = 1)
- ◆ How customers could be aware of Whole Home Efficiency in the first place before it's too late (because they haven't had an audit when they get to him) (n = 1)
 - ◇ Need to ask customers their interest in Whole Home Efficiency during audit
- ◆ Concerned about how the process and timing will work (n = 1)
- ◆ Customers may be disappointed if they did a project recently and it is not considered (n = 1)
- ◆ Reducing carbon footprint (n = 1)
- ◆ Reducing bills (n = 1)
- ◆ Program that helps customers (n = 1)
- ◆ Audit may be a barrier (n = 1)
- ◆ Need education/classes to do blower door home audit (n = 1)
- ◆ Make it an easier process to refer people to (n = 1)
- ◆ Likes bundling aspect (n = 1)

Section B: Non-Participating Trade Partners

- B1.** I understand that you participate in the HVAC standalone program through Xcel Energy but do not currently participate in Whole Home Efficiency. Could you tell me what prevents you from participating in Whole Home Efficiency?
- ◆ One trade partner was not interested in adding in any other offerings to his business. He wants to focus on specializing in one thing well (high efficiency HVAC), so he was not inclined to learn more about how to offer a different program to his customers.
- B2.** Thinking more generally, what challenges do you experience installing multiple energy efficient equipment or projects in homes?
- ◆ Three TP stated that having to do an audit first during emergency situation would be a barrier to participating in the program.
 - ◆ One also mentioned that they saw less of "planner" customers, who were planning to make energy efficiency upgrades rather than emergency replacements, after the Covid pandemic than pre-pandemic. They felt that customers are now just trying to do the bare minimum to get by, so looking for customers who would want to do multiple upgrades might be a challenge.
 - ◆ One mentioned the barriers from the customers' perspective of having to think of which upgrades to do, and the process of going to multiple contractors to qualify for WHE would be time consuming.

- ◆ One TP said that if a customer had an audit done and the audit list said they need to replace or put in a heat pump, then that might make more sense for the customer to reach out and then the trade partner would be able to participate that way. This TP felt that but if they themselves initiate or outreach to the customer, then the pacing of the program wouldn't work out because the customer is likely doing an emergency replacement.

- ◆ One TP said that the time limit of 2 years may not be worth it for the customer to do all the upgrades especially if the rebates are low.

[PROBE] Are there any barriers related specifically to the HVAC industry that prevent you from participating in the Whole Home Efficiency program?

- ◆ One TP mentioned that installing heat pumps could be a barrier specific to HVAC because heat pumps require specific HSPF ratings and the manufacturer they worked with did not have that rating. On the other hand, the contractor could not also qualify for AC rebates even though their SEER ratings qualify for it.

[PROBE] The program has had some difficulty encouraging HVAC contractors to participate in Whole Home Efficiency in the past. What is your perspective on why this might be so?

- ◆ One TP felt that it might be difficult to have a customer come to them after doing the audit and viewed it as a barrier to a sale because they might have to ask the customers go and talk to somebody else if the recommendations said they did not need HVAC upgrades.
- ◆ Two TPs mentioned that having to do the audit prior to participating is a barrier because most customers do not want to wait to get their equipment fixed.

[PROBE] Have the number of projects you have completed for standalone Xcel Energy rebate programs increased, decreased, or stayed about the same in the past few years? Why do you think that is so?

- ◆ Not asked

B3. Do you ever need to coordinate or work with contractors in other specialties to complete projects for your customers?

- ◆ 3 of the TP never had to coordinate with other contractors to complete projects for their customers.
- ◆ One of them said that it is usually a separate thing, and there was never a time that they had done projects under the same timeline.
- ◆ One of the TP has coordinated with other TP before as they have other TP, they were able to refer to customers.

[IF B3 = YES]

B3a. What challenges do you encounter when coordinating with contractors in other specialties on a project?

- ◆ One TP mentioned that they know other contractors to refer to customers for specific type of jobs, so it would not be a problem for them to connect the customers to these

contractors. However, they thought that it would be a complicated process on their end as they have to reach out, set appointments, etc. and was afraid that they would not be able to do all of these things for their customers.

- ◆ Two other TP felt uncomfortable referring contractors they knew nothing about and suggested a referral tool or referral program that contractors could join, in which they could get SPIF/rebates for referring them to customers. However, Xcel Energy would need to make a connection between these trade partners because they don't know what each other does. Having a meeting to talk about what each contractor does and have an estimated price ready will give more credibility.

[IF P1 = NO/HAS LIMITED AWARENESS OF WHOLE HOME EFFICIENCY]

B4. After hearing the description of the program, does it sound like something you would be interested in participating in the future? Why or why not? [REPEAT DESCRIPTION IF NECESSARY]

- ◆ Two TP said that they would be interested in participating in the program if it benefits them and the customer.
- ◆ One TP said that they would participate if it were not a complicated program.
- ◆ One expressed disinterest in the program as they want to focus solely on high efficiency.

[IF P1 = NO/HAS LIMITED AWARENESS OF WHOLE HOME EFFICIENCY]

B5. What challenges could you foresee that may prevent you from participating?

- ◆ One TP mentioned that they have lost some work when they refer customers to do audits, because the auditor told the customers something completely different than what the TP told them, which can result in a lot of back and forth.
- ◆ One TP also said that the amount of paperwork might be a challenge, and they are short on time.
- ◆ One TP said that completing an audit before participating in the program was a challenge and figuring out the three things to upgrade in order to qualify in the program.
- ◆ One also mentioned having to coordinate with other trade partners on other projects would be a potential challenge.

B6. What about the Whole Home Efficiency program would need to change in order for you to pursue rebates through the program?

- ◆ Two TP said that a program is most successful when the rebates are high or impactful. A high rebate could be a motivating factor for a customers to install particular piece of equipment - sometimes they would not have done it without the rebate.
- ◆ One TP said that he would have to be shown that the program benefits the customers.

B7. From your experience participating in other program with Xcel Energy, what makes a program most successful?

[PROBE] What elements of a rebate program make it easiest for you to participate?

- ◆ 3 TP said that a rebate program is easiest when they have streamlined rebate processes. Xcel Energy needs to be clear with their rules to avoid misunderstandings

and back and forth, especially when contractors have a lot of rebate processing to do. It should be as easy as it can to eliminate errors.

- ◆ One TP mentioned wanting to have an alternate rebate recipient option to decrease the amount of paperwork.
- ◆ One TP said that the program should be customer focused and beneficial to customers. And it should be easy for the customers to qualify in the program.

[PROBE] Are there any other elements of your experience with standalone programs that you think Whole Home Efficiency should consider as they improve the program?

- ◆ One TP said that more education about the program is always good. Xcel has done a really good job reaching out to customers and educating them through mailers that touched on some important topics that really gets people to think.

B8. In your experience, what have been the most successful strategies for engaging customers in a rebate program?

[PROBE] How can the Whole Home Efficiency program apply these strategies to motivate more customer participation in the program?

- ◆ One TP thought that having a simple one-pager (link, flyer, etc.) could be beneficial to increase awareness of program to customers and could be handed out by technicians.
- ◆ One TP mentioned adding details of the program to some of the TP's websites so customers could educate themselves and click to sign up for an audit.
- ◆ One TP said showing some success stories from homeowners about the program could also be helpful, especially showing the number of savings achieved by participating in the program. They think that it would be helpful if the customer were able to know how much they could save because sometimes customer sees the program only by the rebates and they often don't think about the potential savings. Moreover, having a savings calculator could also be potentially helpful in making it more interactive for the customers to understand.
- ◆ One TP said that the program should offer higher rebates to engage customers.
- ◆ One TP also said that having Xcel Energy advertise the benefits of high efficiency equipment to customers would also be helpful because it makes the contractor's job selling the equipment a little easier when they're trying to upsell a product.
- ◆ One TP said that it would also be helpful if the program had a streamlined rebate process so that customers did not have to wait a long time to get their rebates because of the back-and-forth processes between Xcel and the contractors.

Section C: Previous Participants

[ASK IF PREV_PART]

Barriers to Participation

C1. I understand that you previously participated in the Whole Home Efficiency program but did not submit any projects in 2021 or 2022. Could you tell me why you did not participate in Whole Home Efficiency in 2021?

[PROBE] Were there any changes to the program that made it more challenging to participate? If so, what were those changes and why were they challenging? (Removing the requirement for completing an insulation project)

- ◆ Two TP said that they were having a hard time getting customers to install the third upgrade since the lightbulbs got removed from the program.
 - ◇ Two TP decided to not participate in the program after the lightbulbs were removed (n = 2).
- ◆ One TP mentioned that a lot of the customers already had programmable thermostats, which made it harder for customers to qualify in the Whole Home Efficiency program.
- ◆ Two TP said that most customers they encountered were not ready to do another bigger upgrade.
- ◆ Two TP also mentioned that it was much easier to participate in the standalone programs.
- ◆ Three TP said that the benefits of the Whole Home Efficiency program are not substantial enough for them to participate in it.
- ◆ One TP recalled Whole Home Efficiency having higher rebates available in the past years than they do currently, making the standalone programs more attractive now.
- ◆ One TP mentioned the difficulty in trying to communicate within the program.
- ◆ One TP said that his customers are different from the typical Colorado customer and are often wealthier. He is often working on second homes and rebates are often not impactful enough because his customers don't necessarily care about rebates.
- ◆ One TP thought that the services offered by their company did not necessarily match what was offered through the Whole Home Efficiency program, which made it harder to complete three projects.
- ◆ Two TP mentioned the qualifications for air sealing or insulation to qualify for rebates in Whole Home Efficiency and standalone was getting extremely difficult to do because of the baseline requirements.

[PROBE] Were there any changes to [insulation/air sealing/HVAC] market that made it more challenging to participate? If so, what were those changes and why were they challenging? For example, jumps in the housing market, increased new construction, etc.

- ◆ One TP mentioned the substantial increase in their cost of service over the years, due to the increase in customers getting work done in their homes. A lot of people are spending more time at home and understanding what's uncomfortable and trying to reduce their utility bills while working from home.
- ◆ One TP also mentioned the economy downturn recently, which caused his business to decrease.
- ◆ One TP also mentioned the Inflation Reduction Act (IRA) that was recently passed, which may impact the way customers do upgrades in order to maximize the number of

incentives every year. This TP thought the requirements for the IRA funding may not line up very well with the requirement of doing all of their projects within two years.

[PROBE] What other elements of the program make it challenging to participate? (Recruiting eligible customers, completing applications, receiving rebates, the audit requirement, program timeline requirements?)

- ◆ Two TP said that the rebate process for the Whole Home Efficiency program was challenging.
 - ◇ One TP mentioned the additional steps required to get rebates, which he said was not included in the form and required him to go back and forth with Xcel Energy staff.
 - ◇ One TP mentioned the uncertainty in the timing of rebates, and the inability to track if the rebates were received by customers.

[ASK IF TIME PERMITS]

C1a. What initially motivated you to sign up as a participating trade partner for the Whole Home Efficiency Program?

- ◆ One TP mentioned that they utilized the program to capture wall rebates because there was no standalone rebate for wall insulation.
- ◆ One TP mentioned the high rebates offered through the program in the past years.

C2. Are there any barriers related to the insulation/air sealing industry or specialty that prevent you from participating in the program?

[PROBE] The program has seen a decrease in the number of projects submitted by insulation contractors over the past few years. What is your perspective on why that might be so?

- ◆ Two TP mentioned that the rebates are too low for the amount of work that they have to put in, that the standalone programs look more attractive to participate in.
- ◆ Two TP also mentioned the difficulty of qualify for the upgrades due to high baselines, for example, air sealing and insulation projects where customers needed to have very bad leaks or insulation in order to qualify for the rebates.
- ◆ One TP mentioned that ever since the lightbulbs were removed, it has been difficult for customers to qualify in the program. The same trade partner mentioned that he was only qualified in the program because the lightbulbs were part of the qualifying upgrades. He did not know a third measures he could install himself.

[PROBE] Was the program's requirement that the customer complete an audit prior to participating in Whole Home Efficiency ever a barrier to participation for you or your customers? If so, how?

- ◆ One TP stated that they don't think audit is a barrier to participating in the program.
- ◆ One TP stated that audit might be a barrier to some customers as they might not have the time or money to complete the assessment up front.

C3. Thinking more generally, what challenges do you experience installing multiple energy efficient equipment or projects in homes?

- ◆ Two TP felt that installing three major projects is hard for customers.

- ◇ One TP described the timeline being hard, as customers sometimes have delays or procrastinate in upgrading things.
 - ◇ One TP mentioned that a challenge to installing multiple projects would be financial constraint, and that some of his customers are budget-constrained.
- C4.** Have you ever attempted to work or coordinate with another trade partner to help your customer complete multiple projects and earn the bonus rebate?
- [IF YES]** Did you experience any challenges coordinating with other trade partners?
- [IF YES]** Would additional support in collaborating with trade partners outside your specialty on Whole Home Efficiency projects motivate you to participate in the program more frequently? What kind of support would be most valuable?
- ◇ Two TP did not think that coordinating with another trade partner on multiple projects would be a challenge.
 - ◇ One TP mentioned said that customers should use Xcel Energy's list of eligible contractors.
 - ◇ One TP mentioned that it was not hard to coordinate with the other contractors to make sure of the timeline.
 - ◇ One TP knew local trade partners that he could recommend to customers, but he viewed it as a complicated process because they had to know which items have to be completed by a participating contractor, install it and then insert themselves back in after everything is done to help customers apply for rebates.
 - ◇ One TP did not have any experience working with other trade partners.
- C5.** What about the Whole Home Efficiency program would need to change in order for you to pursue rebates through the program in the future?
- ◇ Three TP stated that they would pursue rebates through the WHE program in the future if there were higher rebates for installing multiple projects.
 - ◇ They thought that the rebate amount should match up with the extra work that they had to do for customer to do multiple projects, as well as for all the extra paperwork associated with it.
 - ◇ Two TP also suggested bringing back lightbulbs to the program, so that they could easily identify a third project they can complete themselves.
 - ◇ One TP suggested the program should offer more qualifying upgrades that falls under the services he offers, such as more types of insulation.
 - ◇ One TP mentioned streamlining the rebate processes, especially for rebates that are associated with multiple projects.
- C6.** What should the Whole Home Efficiency program do to better motivate more customer participation in the program?
- [PROBE]** In your opinion, what do you think would motivate a customer to complete multiple projects at once?
- ◇ Three TP felt that higher rebates would motivate customer more to participate in the program. Higher incentives will target people that are price sensitive. if they have more

of a reason to do more work in the short period of time, or all at once, then it would be great for them to capture that money.

- ◆ Two TP mentioned offering more measures through the Whole Home Efficiency program.
 - ◇ One TP mentioned offering more electric measures as electrification is becoming more common, and another one recommended offering measures that are suitable for customers that live in the mountains.

C7. What interactions did you have with the program administrator when you participated in the program in the past? [**PROBE** for support received from the program administrator, positive or negative interactions with program administrator, any additional support desired]

[**PROBE** for enrollment process (training, certification, signing agreement), contractor mentoring after enrollment, on-site visits, QA/QC on jobs completed through the program [note that CLEAResult is only expected to do QC on insulation jobs, not on HVAC jobs]

- ◆ Three TP had overall positive interactions with [the program implementer]. However, two out of three said that they were only helpful during certain past periods of time and not throughout all the years they've participated in [inconsistent support].
- ◆ One TP mentioned that the program administrator helped fill out incentive forms, did training, QA/QC as well as provide feedback on equipment.
 - ◇ This TP felt that the QA/QC was a little too strict, and that they would fail a contractor if they missed picking up a piece of trash.

[ASK C8 IF TRADE PARTNER HAS INTERACTED WITH THE PROGRAM ADMINISTRATOR]

C8. Next, I'd like to ask you about your satisfaction with several elements of your interactions and experience with the program administrator, CLEAResult. Using a scale from 1 to 5, where 1 is "extremely dissatisfied" and 5 is "extremely satisfied", please rate your satisfaction with the following items:

- C8a.** Program administrator's communication with you
- C8b.** Program administrator's ability to answer your questions
- C8c.** Program administrator's knowledge of program rules
- C8d.** Program administrator's help with rebate applications in progress
- C8e.** Quality of program administrator's inspections and feedback

- ◆ Not asked – due to time and no significant recent interaction with program administrator

Program Influence on Market

C9. In the past year, did you install multiple residential energy efficiency projects at a customer site without rebates from Xcel Energy?

- ◆ Not asked due to time/answers provided in previous questions.

[IF C9 = YES]

C9a. Did the Whole Home Efficiency program influence you to do this in anyway?

- ◆ Not asked

C9b. Why didn't you pursue rebates for these projects?

- ◆ Not asked

C10. In what ways does the Whole Home Efficiency rebate program impact your business practices, if at all? (i.e., learning about new equipment, availability of equipment, market acceptance of equipment)

[PROBE] Did your previous participation in the Whole Home Efficiency program change any of your business practices?

- ◆ Three TP didn't think that the Whole Home Efficiency program impacted their business practices at all.
- ◆ One TP stated that the program changed the way they look at rebates, so that he would suggest the program when he saw that it would be a good option for his customers (for example, if there was a wall with an open cavity that could use insulation).

C11. Do you mention the bonus rebates available through the Whole Home Efficiency program to your customers? Why or why not?

- ◆ Not asked

[IF C11 = YES]

C11a. At what point in the sales process do you mention the bonus rebates available through the Whole Home Efficiency program to your customers?

- ◆ One previously participating trade partner stated that they mentioned the bonus rebates during the audit process, as that is the time when they discuss options with the homeowner.

C12. Do you do any work for customers served by another utility? In what regions?

- ◆ One TP does work for customers served by another utility in Longmont Co and Platte River. But the TP prefers Xcel Energy standalone program to their program because there's just so much documentation to fill out with the other program.

[ASK IF C12 = YES]

C12a. About what percent of the equipment you sell in this region is considered energy efficient? [DEFINE what EE means for the trade partner's specialty]

- ◆ Not asked/not applicable

C12b. For about what percent of customers in these regions do you install multiple home efficiency upgrade projects?

- ◆ Not asked/not applicable

Section D: Never-Participating Trade Partner

[ASK IF NEVER_PART]

Barriers to Participation

D1. I understand that you signed up to be a participating trade partner for the Whole Home Efficiency program but have not submitted any projects. Could you tell me why you have not participated in Whole Home Efficiency?

[PROBE] Were there any changes to the program after you signed up that prevented you from participating? If so, what were those changes and why were they challenging?

[PROBE] Were there any changes to your industry's [HVAC] market that prevented you from participating? If so, what were those changes and why were they challenging? For example, jumps in the housing market, increased new construction, etc.

- ◆ One TP said he did not end up participating in the program because they did not do audits or blower door tests, etc.

[ASK IF TIME PERMITS]

D1a. What initially motivated you to sign up as a participating trade partner for the Whole Home Efficiency Program?

- ◆ Two TP initially signed up to participate as a TP because they did not want to miss an opportunity if a customer ended up wanting to participate in the program.

D2. Are there any barriers related specifically to the HVAC industry or specialty that prevent you from participating in the program?

[PROBE] The program has had some difficulty encouraging HVAC contractors to participate in Whole Home Efficiency in the past. What is your perspective on why this might be so?

[PROBE] Is the program's requirement that the customer complete an audit prior to participating in Whole Home Efficiency a barrier to participation for you or your customers? If so, how?

- ◆ 2 TP felt that audit is a barrier to participating in the program.
 - ◇ One said they mentioned the Whole Home Efficiency program to customers in the past but did not get a lot of interest.
 - ◇ One thought that having to do an audit first when customers wanted to directly do other projects could be a barrier for some. The initial cost of audit might also pose as a challenge to some people.
- ◆ One TP said that the rebate process is complicated, particularly HVAC portions, and that customers are sometimes confused about the HVAC forms.
- ◆ One TP said that the HVAC business model itself is a challenge, especially if they are being asked to incentivize people to install new equipment when their equipment is not broken.
 - ◇ One TP said that there would need to be some work done to change trade partner's business model moving forward.

D3. Thinking more generally, what challenges do you experience installing multiple energy efficient equipment or projects in homes?

- ◆ One TP said that they had never worked with another contractor before.
- ◆ One TP mentioned that one of the challenges in installing multiple equipment would be financial constraint, especially as price increases and equipment is expensive depending on size and efficiency.
- ◆ One TP also mentioned that there is unclear information on equipment and customers are unclear on the difference between some measures.
- ◆ One TP felt that understanding how to pace out their projects might also be a challenge to customer (i.e., which project to do first, second, third)
- ◆ One TP also said that putting the effort into contacting different contractors to do multiple projects from the customer perspective might be a challenge.

D4. What about the Whole Home Efficiency program would need to change in order for you to pursue rebates through the program in the future?

- ◆ One TP stated that they would pursue rebates through the program if participation in Whole Home Efficiency increase. However, they also are interested in a higher incentive to be compensated for the amount of paperwork associated with the program.
- ◆ One TP said that they would definitely participate if the customer already did an audit themselves and had a list of recommendations and approached them to install HVAC.

D5. What should the Whole Home Efficiency program do to better motivate more customer participation in the program?

[PROBE] In your opinion, what do you think would motivate a customer to complete multiple projects at once?

- ◆ One TP felt that either lowering the price of the audit or eliminating the price completely would help motivate people to participate in the program.
- ◆ Two TP said that rebates are still helpful in the customers' decision to install a more efficient equipment model.

Program Influence on Market

D6. In the past year, did you install multiple projects at a customer site without rebates from Xcel Energy?

- ◆ Two TP said that they have not installed any projects without Xcel rebates.

[IF D6 = YES]

D6a. Did the Whole Home Efficiency program influence you to do this in anyway?

- ◆ Not asked

D7. In what ways does the Whole Home Efficiency rebate program impact your business practices, if at all? (i.e., learning about new equipment, availability of equipment, market acceptance of equipment) Did signing up for the Whole Home Efficiency program change any of your business practices?

- ◆ One TP said that signing up for WHE program did not change any of their business practices.

D8. Do you mention the bonus rebates available through the Whole Home Efficiency program to your customers? Why or why not?

- ◆ No (n=1)
- ◆ Yes (n=2) – But one is describing Xcel Energy rebates generally.

[IF D8 = YES]

D8a. At what point in the sales process do you mention the bonus rebates available through the Whole Home Efficiency program to your customers?

- ◆ One TP mentions the bonus rebates from Whole Home Efficiency if customers are talking about wanting to do multiple projects, or if their house is old, and if they want to do insulation on top of just installing heating and cooling equipment.
- ◆ One TP said that they mentioned rebates (generally – not specific to Whole Home Efficiency) if the customers have Xcel Energy as their electricity provider.

D9. Do you do any work for customers served by another utility? In what regions?

- ◆ One TP works with customers served by United Power, which is an only electricity provider. A lot of their work for United Power consists of selling heat pumps, especially with the high rebates offered by the city of Denver for the equipment. They also do a few services in Aurora but most of the customers from United Power are out of their service area. In their opinion, United Power has bigger rebates, and that does change the kind of equipment customers buy.
- ◆ Other TP did not work with customers served by another utility.

[ASK IF D9 = YES]

D9a. About what percent of the equipment you sell in this region is considered energy efficient? [DEFINE what EE means for the trade partner's specialty]

- ◆ Not asked/not applicable

D9b. For about what percent of customers in these regions do you install multiple home efficiency upgrade projects?

- ◆ Not asked/not applicable

Section E: Closing

E1. Is there anything we didn't cover that you'd like to mention or discuss about either your experiences with the Whole Home Efficiency program or experiences installing multiple measures at a customer site?

- ◆ One TP said one change they did not really like related to Whole Home Efficiency was that they don't require the NATE certification for HVAC anymore. They liked the NATE requirement because it provided some competitive advantage over other contractors. They felt that it added a little bit more credibility and it keeps some of the lazier

contractors out of the program. They felt that now, anyone can just sign up to participate, whereas they used to have to do tests and classes and pay renewal fees.

- ◇ The TP suggested having a better vetting process of the contractors because it would make sure better contractors are getting rebates and getting the calls for it. They also suggested some sort of appreciation for contractors who meet certain rebate milestones get a reward – In general, more recognition and appreciation for those who are going above and beyond.

Whole Home Efficiency Evaluation

2022 Program Evaluation: Recommendations and Responses

The Xcel Energy Whole Home Efficiency product in Colorado is targeted toward existing single-family homes in need of multiple energy efficiency improvements. By providing these customers with rebate incentives, the Company is able to incorporate a bundled, whole home approach to energy efficiency. Whole Home Efficiency is available to residential Xcel Energy account holders with combination electric and natural gas, electric only, or gas only service. Eligibility is dependent on the type of equipment installed.

Xcel Energy (“the Company”) engaged a team of researchers led by TRC to conduct a process and impact evaluation of the Whole Home Efficiency product. The evaluation team was asked to assess the following:

- Customer satisfaction with the product and motivations to participate in the product
- Xcel Energy’s influence on customers’ decisions to implement projects in their data center and the customer journey paths that lead to such projects
- The roles, successes, and challenges faced by participating trade partners
- Opportunities to increase product implementation and delivery
- The impact of customer free ridership on product savings

Based on the results of this research, the evaluation team developed key findings and recommendations for Xcel Energy.

Recommendation	Response
1) The evaluation team recommends using a prospective NTGR of 0.76 and 0.83 if the product team incorporates recommendations 4, 5a, 5b, and 8.	The Company will implement the required recommendations and adopt a prospective NTGR of 0.789 for the product, which is the weighted average NTG assuming that the 0.76 NTG would cover the period from 1/1/2023 through 7/31/2023 and the 0.83 NTG would in place for the rest of the year starting 8/1/2023 with implementation of the 2023 DSM/BE Plan and the evaluation recommendations.
2) Assess the feasibility of converting Whole Home Efficiency into a non-resource product that supports the stand-alone residential rebate products to streamline participation for trade partners and customers.	The Company has assessed the feasibility of adapting the product into an indirect product and has determined that this approach would not affect participation positively.
3) Engage the implementer to better facilitate connections between trade partners of different specialties so they can support customers.	The Company agrees to facilitate the connections between the Implementer and the Trade Partners.
4) Leverage the implementer to facilitate trade partner trainings, to underscore benefits of the product, clarify product misconceptions, and provide clear updates on product changes.	The Company agrees to support implementer led trade partner trainings.

<p>5) a) Increase the bonus rebate to drive participation and increase the bundling of upgrades.</p> <p>b) Highlight the bonus rebate in proactive after-audit follow-up with customers.</p>	<p>a) The Company agrees to increase the bonus rebate from 10% to at least 25%.</p> <p>b) The Company agrees to highlight the bonus in after-audit customer follow-up.</p>
<p>6) a) Use multiple outreach channels to highlight the resources available to customers through the implementer, including the Energy Advisor, who can help them select projects and connect with trade partners.</p> <p>b) Increase promotion budget to allow for multi-channel outreach and improve ability to engage customers through high-touch outreach.</p>	<p>a) The Company agrees to use multiple channels to conduct program outreach towards potential program participants.</p> <p>b) The allocated budget should be sufficient to achieve multi-channel engagement.</p>
<p>7) Leverage audit participants as hot leads by asking auditors and implementation staff to specifically mention Whole Home Efficiency and send targeted after-audit outreach to customers promoting Whole Home Efficiency.</p>	<p>The Company agrees to send after-audit outreach to customers promoting Whole Home Efficiency.</p>
<p>8) Ask the implementer to repeat contacts to audit participants and partial participants to encourage them to install different measure types (like HVAC) and connect them to the appropriate resources.</p>	<p>The Company agrees to have the program implementer repeatedly contact audit participants to share program information and connect them with additional resources.</p>
<p>9) Develop leave-behind marketing for the product to be distributed during audits and Home Energy Squad visits. Provide a one-page leave-behind document or magnet to implementer staff, specific to Whole Home Efficiency.</p>	<p>The Company agrees to develop a marketing leave-behind.</p>