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Xcel Energy

2021 Colorado Commercial & Industrial New Construction Product Impact & Process Evaluation

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2021 Colorado New Construction Product

Introduction

Xcel Energy contracted with TRC to evaluate the 2021 Colorado New Construction Product in Colorado. This product helps commercial and industrial (C&I) customers include energy-efficient systems and equipment in the design of new construction or major renovation projects. The New Construction Product currently includes two components: Energy Design Assistance (EDA) and Energy-Efficient Buildings (EEB). EDA is a more comprehensive component that engages customers early in the design process and uses integrated design modeling. EEB is designed for smaller buildings with simple systems that do not require full-scale energy modeling, have tighter budgets, and/or are engaged later in the design process.

As part of the process evaluation, TRC researched customer awareness of the product, assessed product experiences and satisfaction, identified opportunities to support jurisdictional energy-related goals such as electrification, and identified motivations and barriers for customers to install energy-efficient equipment and systems. For the impact evaluation, TRC assessed the impact of the product on the new construction market (i.e., a net-to-gross ratio, or NTGR). This summary includes the key findings and recommendations from our evaluation.

Methods

Participating customer surveys (n=12)

Participating trade partner interviews (n=14)

Nonparticipating trade partner interviews (n=10)

Peer utility interviews (n=5)

Fielding:
July 2021 – January 2022

Summary of Findings

The evaluation team estimated a **retrospective NTGR of 0.86** for the product, based on participating customer and trade partner responses. The team recommends Xcel Energy could rely on the retrospective NTGR for a **prospective NTGR of 0.86**.

When asked about satisfaction with their product experience, participating customers were overall satisfied with the product and **were most satisfied with the rebate, the easy process, and saving energy.**

Participating customers rated most product activities very or somewhat easy, but some respondents rated **contacting Xcel Energy** and **selecting qualifying equipment** as difficult.

Participating customers primarily learned about the product through **Non-Xcel Energy consultants, Xcel Energy staff, or Xcel Energy account representatives**. This suggests that personal contact is key to encouraging participation in the product.

Participating trade partners noted that design decisions are most often made based on **cost**, **jurisdictional goals** and **energy codes**, and **owner preference**. Modelers underscored varied owner motivations, including commitment to **community**, **energy codes**, and **market differentiation**.

Participating customers were **somewhat to very familiar with electrification** and expressed interest in a variety of electrification technologies. Participating trade partners noted that they receive very little pushback from clients related to electrification.

Product Influence

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

0.86 = (1- 0.17) + (0.00) + (0.03)

Over half of participants (58%) reported at least one product factor was extremely influential.

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

The product **influenced energy modelers,** with some highlighting the importance of the product to their business and the industry.

EXECUTIVE SUMMARY

2021 Colorado New Construction Product

Awareness, Motivations & Barriers to Participation

Awareness

Non-participating trade partners were largely **unaware** of the product (8 of 10).

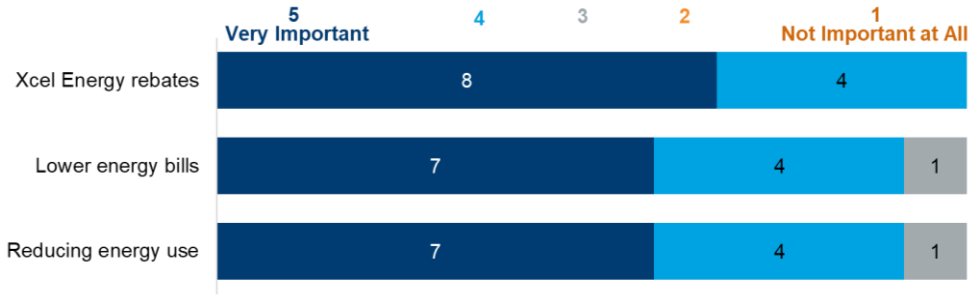
Non-participating trade partners would prefer to learn about the product via **lunch and learns** (n=3), **informational sessions** (n=3), and **continuing education credits** (n=3).

Participating customers primarily heard about the product through non-Xcel Energy **consultants, product staff**, or **account representatives.**

Motivations

Participating trade partners' motivations for participation included **rebates** (n = 4) and **customer energy efficiency goals** (n = 4).

Participating customers were asked to rank the importance of several factors for participation, and the most influential were **rebates, reducing energy use,** and **reducing energy bills.**



Barriers

Participating trade partners were generally satisfied with the product and did not list major challenges.

Modeler barriers included the **OpenStudio software** (n = 3) and the **Terms and Conditions** associated with the product approval process (n = 2).

Non-participating trade partners cited a **lack of knowledge and awareness (n = 8)** as a barrier to product participation. All but one interviewee was interested in learning more about the product (n = 9).

Peer Utility Modeling Software & Project Tracking

Utilities varied in their approach to energy modeling. However, two peer programs **allow participating energy modelers to use their choice of energy modeling software**, and one allows energy modelers to **choose from a pre-approved list of energy modeling software.**

Utilities also varied in how they track project progress. Two peers use a **trade partner portal** used for all their business programs. These peer utility models offer alternate options to the EDAPT portal used by the Xcel Energy product for energy modeling and project tracking but may not allow for the integration with energy modeling outputs that the EDAPT portal allows.

EXECUTIVE SUMMARY

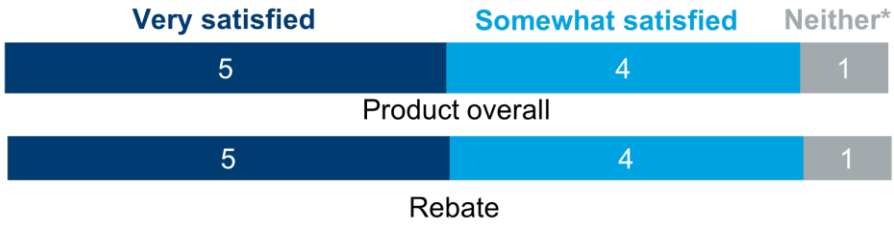
2021 Colorado New Construction Product

Experience & Satisfaction

Participating Customers

Respondents were **satisfied** with the **product overall**. The **rebate**, **easy process**, and **energy savings** all received high satisfaction ratings.

Respondents were most dissatisfied with **contacting Xcel Energy**. The respondents who found contacting Xcel Energy staff somewhat difficult were also somewhat dissatisfied with **their interactions with product staff.**



*There were no "somewhat dissatisfied" or "very dissatisfied" respondents.

Participating Trade Partners

4.3 out of 5

On average, **participating trade partners** were **satisfied** with their product experience as a whole.

Design teams were particularly satisfied with their **interactions with energy modelers**, rating them a 4.8 out of 5.

Trade partners found the **program application (4.5 out of 5)**, **selecting energy efficiency opportunities (4.5)**, and **contacting energy consultants (4.6)** easiest to complete.

Some modelers (n = 2) were less satisfied with the product due to the **reliance on the OpenStudio software and EDAPT portal**.

Electrification

Participating Customers

Respondents were typically **somewhat** or **very familiar** with electrification (9 of 12), and none gave it an unfavorable rating. However, some respondents did not give an accurate definition, indicating some confusion.

Four respondents highlighted the benefits of electricity or the environmental cost of fossil fuels. Those that were neutral discussed the complex and challenging steps to becoming an all-electric society, including **concerns about grid impacts**.

While I think there are advantages of electrification, there are major technical challenges to making it feasible. Just the idea of exchanging cars to all electric vehicles is a major hurdle in a residential area. It's difficult and high cost.

Trade Partners

Participating trade partners are aware of the shift toward electrification and receive little push-back from clients on increasing electrification.

Our clients have considered [all-electric buildings] and would like to do that… [they] are eager to come on board with that.

Nonparticipating trade partners were hesitant about the shift towards electrification (n = 7), though most believed that the shift was coming (n = 9). They also highlighted the fact that **gas rates are cheaper than electric rates (n = 7)**, adding complexity to the shift towards electrification.

It's going to take a big paradigm shift for people to gravitate towards non-gas heat, because it's ingrained in our culture that gas heat is the cheapest. And it is.

Conclusions & Recommendations

The New Construction Product remains influential in encouraging customers to include energy-efficient equipment and systems in new construction projects in Colorado. The evaluation team estimated a **retrospective NTGR of 0.86** for the product, based on participating customer and trade partner responses.

The evaluation team recommends using a prospective NTGR of 0.86 if program design and implementation remains the same.

The program design of working with pre-approved, independent energy consultants to implement the EDA product is achieving product objectives and influencing design team decision-making. However, the evaluation team anticipates that energy codes will continue to drive energy efficiency, and that energy efficiency will continue to be embedded in customer goals in future years. Therefore, these factors will continue to influence customer decision-making and will continue to drive free-ridership.

Participating customers and participating trade partners were largely satisfied with the product and found product participation easy. However, some respondents found contacting Xcel Energy to be difficult. Clarification of when, how, and with whom to communicate might improve and streamline customer experience with the product.

Strengthen relationships between product staff and strategic account representatives. Customer responses suggest that additional coordination among product staff and strategic account representatives is needed to provide a more seamless experience. This increased coordination could help to clarify communication channels internally, as well as for customers.

Work more closely with EEB implementors to understand barriers to selecting energy-efficient equipment and provide clarifications as needed. Although just one customer had difficulty with selecting energy-efficient equipment, it suggests that improvements can be made to product processes to help customers more easily participate in the product and include more energy-efficient measures in the new building design phase.

Modelers reported that there were challenges with the EDAPT portal and the OpenStudio software. Several modelers noted that OpenStudio is not their standard energy modeling software, and that OpenStudio trainings are limited. NREL will stop hosting EDAPT in October 2022, however a third-party is in the process of taking over this service.

Consider opportunities that allow energy modelers to use multiple energy modeling software. This could include considering moving away from EDAPT and allowing modelers to choose from a pre-approved list of modeling software. If this option is pursued, Xcel Energy should assess savings assumptions in modeling software tools when selecting an alternative. This could also include identifying or developing software to convert outputs associated with other energy modeling software to XML, the output produced by OpenStudio that is uploaded into EDAPT.

If OpenStudio remains the primary modeling tool, offer training on OpenStudio to participating energy modelers. Offering these trainings could help to increase modeler familiarity and comfort with OpenStudio and provide an opportunity for Xcel Energy to outline the benefits of using OpenStudio in conjunction with EDAPT.

Conclusions & Recommendations

Nonparticipating trade partners were largely unaware of the New Construction Product. Nine of the ten interviewed nonparticipating trade partners were interested in learning more about the product and indicated a preference for direct outreach, including lunch and learns (n=3), virtual or in-person informational sessions (n=3) and continuing education credits (n=3) with organizations such as American Institute of Architects (AIA).

Explore additional channels to identify and engage with customers and trade partners. This could include direct outreach to top design firms, developers, and construction firms in Colorado who are not currently engaged in the New Construction Product. These additional outreach channels might help product staff identify potential product participants missed by current outreach strategies.

Participating customer respondents have a favorable opinion of electrification and interest in electrification technologies. However, three customers who said that they were familiar with electrification offered definitions that indicate some confusion. Participating trade partners noted that they receive little pushback from clients on electrification. However, some design teams were concerned about grid impacts of electrification.

Coordinate among product staff, account representatives, sales teams, and other relevant Xcel Energy staff to define opportunities to educate customers about electrification building practices and opportunities. Product staff should coordinate with these groups to ensure that the process is consistent, straightforward, and seamless for customers.

Offer training on electrification technologies and practices for design teams. Product staff should consider including training on electrification technologies and practices for design teams to help address their hesitation to promote.

Align New Construction Product offerings with utility-wide discussions around carbon-free goals to make the operating cost of electric heating more feasible to customers. Continue conversations surrounding electric rates to make them more friendly to customers during heating periods of the year, compared to gas rates.

1 Introduction

Xcel Energy offers a comprehensive array of energy services and products to its customers, including demand side management (DSM). For its 2021 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 eleven products offered in Colorado and Minnesota in 2021.[1] This included the New Construction 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 Colorado New Construction product helps commercial and industrial (C&) customers include energy-efficient systems and equipment in the design of new construction or major renovation projects. The New Construction product currently includes two primary components[2]:

- **Energy Design Assistance (EDA**) is more comprehensive, as it engages participating customers early in the design process and uses integrated design modeling. EDA was last evaluated in 2006. This component targets larger buildings, offering three tracks:
  - *EDA Basic*: This track provides energy expertise during the design phase of new construction or major renovation projects, collaborating with customers to identify energy savings opportunities.
  - *EDA Enhanced:* This track is for customers interested in obtaining a sustainable building certification (e.g., Leadership in Energy and Environmental Design (LEED)) and earlier analysis in daylighting, lighting, mechanical system comparison and building orientation.
  - *EDA Express*: This track typically serves customers whose projects are a more common type. This track draws from previously modeled buildings, which reduces administrative requirements for the builder.
- **Energy-Efficient Buildings (EEB**) is designed for smaller buildings or those buildings with simple systems that do not require full-scale energy modeling, have tighter budgets, and/or are engaged later in the design process (typically after the schematic design phase). EEB offers prescriptive incentives for a comprehensive list of typical energy efficiency measures, including heating, cooling, lighting, refrigeration, building envelope, and electric motors, as well as custom incentives for other opportunities. The EEB component has not been evaluated previously.

[1] The products selected for evaluation include: ENERGY STAR® New Homes (CO), C&I New Construction (CO), High Efficiency AC (CO), Home Lighting (CO), Compressed Air (CO), Compressed Air (MN), Commercial Efficiency (MN), Process Efficiency (MN), Low-Income Home Energy Squad (LIHES), Home Energy Savings Program (HESP), and Multi-Family Energy Savings Program (MESP).

[2] In September 2019, the product began offering a third component, New Construction Lighting. This is similar to other prescriptive products, in that customers may apply for rebates by submitting a lighting ComCheck and providing a detailed invoice of installed equipment. This component was a small part of the product in 2020 and is not a focus of the evaluation.

Table 1-1 shows the number of projects completed and the associated savings through the CO New Construction Product in 2020.

Table 1-1. Product Participation & Savings

Component	Units		kWh		kW		Dth	
	Quantity	% of total	Quantity	% of total	Quantity	% of total	Quantity	% of total
EDA	86	48%	54,852,622	88%	17,309	91%	122,779	89%
EEB	45	25%	5,604,154	9%	1,241	7%	15,709	11%
New Construction Lighting[a]	49	27%	2,010,456	3%	377	2%	-	
Total	180	100%	62,467,232	100%	18,928	100%	138,488	100%

[a] *The New Construction Lighting component was a small part of the product in 2020 and is not a focus of the evaluation.*

For the 2019/2020 product cycle, Xcel Energy adjusted the incentive structure for the EDA component by reducing the incentive for peak coincident demand to $250/kW, down from $400/kW, and adjusting kWh rebates to reflect time-of-use (TOU) rates. EDA is also increasingly prioritizing technologies and strategies that mitigate peak loads.

To better understand the report's findings in future contexts, it is important to recognize modifications to the product design that Xcel Energy is implementing. Xcel Energy has made changes to the New Construction product for 2021. In 2021, the New Construction product included an additional component: Codes and Standards Compliance. As part of this component, Xcel Energy:

- Proactively encourages and supports jurisdictions to adopt the latest building energy codes, and
- Provides resources to support improved code compliance.

1.2 Evaluation Overview

The evaluation team designed a comprehensive evaluation of the CO New Construction Product to provide information on seven key research objectives:

- Estimate product influence on customer decisions (net-to-gross ratio).

- Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and what they would like to see included in the product.
- Understand what motivates C&I customers and building design teams to participate in the product.
- Identify where members of the building community (e.g., customers, design teams, energy modelers) are in their own energy transformation journeys to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle, and infrastructure readiness).
- Understand the extent to which increasingly stringent energy code adoption and rising baselines serve as a barrier to participation among customers.
- Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, level of savings achieved above code, and rebate amounts.
- Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.

Table 1-2 presents an overview of the research topics and data sources used in this evaluation of the CO New Construction Product.

Table 1-2. Research Methods & Topics

Primary Research Topics	Staff Interviews (n=5)	Participating Customer Surveys (n=12)	Participating Trade Partner Interviews (n=14)	Non-Participating Trade Partner Interviews (n=10)	Peer Utility Benchmarking Interviews (n=5)
Estimate an overall NTG ratio including the major drivers of free-ridership, spillover, and market effects		X	X	X	
Collect feedback on the product experience		X	X		X
Identify motivations and barriers to participation	X	X	X	X	
Gauge interest and understanding of jurisdictional goals (e.g., electrification)		X	X	X	X

1.3 Report Organization

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

- Section 2 reviews the approach and results of the net impact evaluation and the attribution of product impacts using a standard net-to-gross ratio (NTGR) analysis.
- Section 3 discusses the process evaluation components, including product awareness, motivations and barriers, product satisfaction and experiences, and electrification and electric vehicle (EV) readiness.
- Section 4 presents our conclusions and recommendations.
- Supporting documents, such as the evaluation plan, data collection instruments, and task-specific findings, can be accessed in this report's appendices.

2 Impact Findings

A central component of this evaluation was the estimation of the net-to-gross ratio (NTGR) for the Xcel Energy New Construction Product in Colorado. For demand-side management (DSM) products, the NTGR is a metric that estimates the influence of the product on the target market. 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 a 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 broader portfolio. The NTGR includes several factors that create differences between gross and net savings, such as free-ridership and spillover. In prior years, Xcel Energy relied on a NTGR value of .99 for EDA gas, .97 for EEB gas, and .95 for both EDA and EEB electric. These NTGRs are per filings approved by the Colorado Public Utilities Commission.

TRC estimated a retrospective NTGR based on data reported by customers and participating trade partners. We then recommended a prospective NTGR based on potential changes to the product's design and market conditions. Note that in many cases a NTGR of 1.0 may not be desirable because eliminating all free-ridership may not be feasible for a program operating at significant scale. In addition, a variety of factors affect the achievable level of free-ridership, including the maturity of the product, the maturity of the technologies it promotes, product intervention strategies, and cross-product coordination strategies. We have taken care to present our NTGR results with this context in mind.

This section presents:

- **Key Impact Findings –** The key findings section presents the recommended NTGR based on the evaluation team's synthesis of findings from market actors.
- **Net-to-Gross Approach –** The approach section presents an overview of the evaluation team's methods of calculating the recommended NTGR.
- **Retrospective Net-to-Gross Ratio Inputs –** This section presents qualitative and quantitative data that support our NTGR calculations.
- **Prospective Net-to-Gross Considerations –** This section presents findings the evaluation team considered when recommending its prospective NTGR.
- **Peer Utility Net-to-Gross Comparisons –** This section presents NTGR ratios from peer utilities included in this evaluation.

2.1 Key Impact Findings

This section presents a summary of the key findings from the impact evaluation for the CO New Construction Product, including retrospective and prospective NTGR recommendations. TRC has provided its estimated retrospective NTGR, based on the quantitative and qualitative results of customer, nonparticipating customer, and trade partner research. We have recommended a prospective NTGR, based on potential changes to the new construction market and product design.

2.1.1 Retrospective Net-to-Gross Ratio

TRC estimated a retrospective NTGR of 0.86 for the C&I New Construction Product in Colorado, based on participating customer and trade partner responses. To estimate this NTGR, the evaluation team took the following steps:

- The evaluation team first estimated an overall free-ridership ratio of 0.25 (unweighted average) based on participating customer surveys and a review of telephone survey recordings to determine whether data obtained through the initial survey should be adjusted.
- These results were weighted to be representative of the population and adjusted to 0.17.
- The evaluation team found minimal evidence of participant spillover in the respondent pool; therefore, it did not include a spillover adjustment to the NTGR.
- The evaluation team included a 0.03 adder for market effects, as trade partner interviewees (i.e., those with energy modelers who participate in a large number of projects) indicated that the product influences trade partner design decisions and is influential in the industry broadly. Additionally, participating trade partners (both energy modelers and design teams) noted that the product helps reduce removal of energy efficiency measures if projects are subject to value engineering processes.
- To calculate the overall NTGR, the evaluation team subtracted the free-ridership ratio from 1.0, then added 0.03 for market effects. This brings the retrospective NTGR to 0.86. Detailed methodology for the NTGR calculation can be found in Section 2.2. A discussion of NTGR inputs can be found in Section 2.3, including drivers of free-ridership. A comparison of the overall NTGR to that of peer programs can be found in Section 2.5.

2.1.2 Prospective Net-to-Gross Ratio

We anticipate that energy codes will continue to drive energy efficiency, and that energy efficiency will continue to be embedded in customer goals. As both factors were and are anticipated to continue to be major drivers of free-ridership, the evaluation team recommends that Xcel Energy rely on the retrospective NTGR for the prospective value. However, trade partner interviews with design teams highlighted the influence of energy modelers on trade partner and customer decision-making. As such, we anticipate that Xcel Energy can continue to influence the market and have a role in supporting advancement of building performance through emerging practices such as electrification of end uses like space and water heating. This value is supported by a review of peer utility NTGRs.

2.2 Net-to-Gross Approach

The net-to-gross assessment aims to estimate the percentage of savings achieved that can be attributed to product's actions, or a net-to-gross ratio. The evaluation team estimated the NTGR for the Colorado New Construction Product using a self-report approach, based on participating customer survey results in combination with additional research data inputs. The resulting value includes multiple metrics, which are described in the sections below. TRC refined the

methodology from 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.

The data inputs for the NTGR analysis included:

- **Participating customer self-report surveys –** focused on project-level effects, including free-ridership and participating customer spillover
- **Participating trade partner interviews –** focused on determining overall market effects and whether trade partners were influenced by Xcel Energy

The evaluation team contacted all 159 customers who participated in the New Construction Product between the fourth quarter of 2019 and the first quarter of 2021. Twelve of these customers responded to the survey, a response rate of 7.5%. This response rate is lower than anticipated for product participants.[3] With this response rate, the evaluation team was able to reach a 80% level of confidence with +/- 17.92% relative precision. Given this lower response rate, the evaluation team relied on trade partner interviews to validate participating customer survey findings. The evaluation team also attempted to survey a representative mix of EDA and EEB participating customers. Table 2-1 shows the number of surveys completed through the EEB and EDA, as well as the associated energy savings by these two factors.

Table 2-1. Product Participation

Component	Survey Respondents			
	kW	kWh	Dth	Completes
EDA	2,358	6,139,585	191,256	8
EEB	44	69,370	0	4
Total	**2,401 (8%)**	**6,208,955 (10%)**	**191,256 (12%)**	**12**

The evaluation team used self-reported data from participating customers to develop an initial NTGR. We then used the additional sources listed above to construct a logical narrative of product attribution and finalize the prospective NTGR for the product.

The NTGR relies on three key components: a free-ridership score, a spillover score, and a market effects score. The following sections define each of these key components and then present how they are combined to estimate the NTGR.

[3] Survey response rates have dropped nationally for similar survey efforts, potentially due to the COVID-19 pandemic and/or survey fatigue. While these response rates are lower than anticipated, and lower than response rates seen in previous years, they are similar to response rates for other research efforts conducted in 2021.

2.2.1 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.

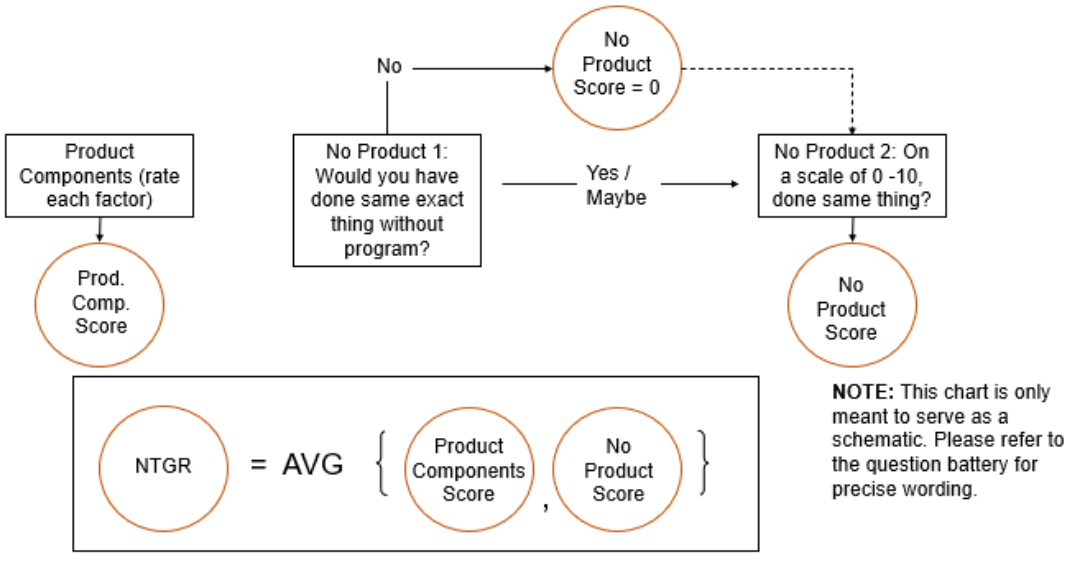
To determine free-ridership, the evaluation team applied the C&I New Construction Protocol from the Illinois TRM, following the core Non-Residential Free Ridership protocol with the following exception: the concept of project timing and deferred free-ridership is not applicable in new construction projects and, as a result, the deferred free-ridership specifications have been excluded from our estimation.

The evaluation team wrote specific research questions to assess three free-ridership components:

- **A Product Components Score**, based on the participating customer's rating of the importance of various factors on their decision to carry out the energy-efficient project.
- **A Product Influence Score,** based on the participating customer's perception of the importance of various product factors, relative to the importance of non-product factors in their decision to carry out the energy-efficient project. This score was used as a consistency check only, not a direct input into the NTGR.
- **A No-Product Score,** based on the participating customer's intention to carry out the energy-efficient project without product funds. The No-Product score was set to zero if the participating customer responded "no" to the binary question asking if they would have installed the exact same measures had the product not been available.

When scored together, these components assess the likelihood of free-ridership on a scale of 0 to 10. Figure 2-1 describes the logic used for calculating free-ridership.

Figure 2-1. New Construction Free-Ridership Calculation Methodology



2.2.2 Spillover

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. For this research, the evaluation team analyzed both participating and nonparticipating customer spillover.

2.2.2.1 Participating Customer Spillover

Participating spillover is a measure of the amount of energy savings that occurred due to the product that were not captured in the product's claimed energy savings. To be eligible for spillover, participating customers must have met the following criteria:

1. Installed additional energy efficiency equipment after participating in their respective product
2. Not received rebates for this equipment (and not be in the process of applying for rebates)
3. Been influenced to install this equipment by the New Construction Product.

No participating customers met these qualifications; therefore, we did not attribute any participating customer spillover to the New Construction Product. Please refer to our evaluation plan, in Appendix A, for more information about our approach to estimating spillover savings if any customers had qualified.

2.2.2.2 Nonparticipating Customer Spillover

Nonparticipating customer spillover, is a measure of the energy savings that occurred due to nonparticipating customers that completed new construction or major renovation projects within the past two years that meet product size requirements but did not participate in the New Construction Product. To be eligible for nonparticipating customer spillover, customers must have met the following criteria:

1. Been aware of Xcel Energy's energy efficiency programs and/or marketing messages
2. Known how the systems or equipment included in the design were more efficient than other building designs
3. Named an efficiency level that is above minimum code requirements or identified a technology that the evaluation team could confirm is above minimum code requirements.

No nonparticipating customers met these qualifications; therefore, we did not attribute any nonparticipating customer spillover to the New Construction Product. Please refer to our evaluation plan, in Appendix A, for more information about our approach to estimating spillover savings had any customers qualified.

2.2.3 Market Effects

The final component to the NTGR was a market effects adder. The market effects adder estimated additional savings that could be attributed to the New Construction Product due to prolonged changes in the market due to the product's influence. To understand market effects,

TRC asked participating trade partners about the product's impact on the overall new construction market in the Colorado Xcel Energy territory.

2.2.4 Determination of Net-to-Gross Ratio

The evaluation team estimated the CO New Construction Product's initial NTGR using the formula in Equation 2-1 below:

Equation 2-1. Net-to-Gross Estimation Methodology

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

Finally, the evaluation team utilized all information collected about the product (through customer surveys, trade partner interviews, and known product changes) to construct a logical, internally consistent, and coherent narrative of product attribution that attempted to identify all possible pathways of Xcel Energy influence. Based on these results, we recommended a final summative NTGR that is consistent with this narrative.

2.3 Retrospective Net-to-Gross Ratio Inputs

As described in the approach section, the recommended retrospective NTGR is based on three primary data inputs: free-ridership, spillover, and market effects. This section explores the results from each of these inputs in more detail, including the qualitative data that support the results.

2.3.1 Free-Ridership Results

Free-ridership is a measure of the proportion of the product's claimed energy efficiency savings that would have occurred in the absence of the product. This section presents results related to the two metrics used to estimate the final free-ridership value of 0.17: the Product Components Score and the No-Product Score.

2.3.1.1 Product Components Score

The evaluation team estimated the unweighted Product Components Score for the New Construction product to be 0.11. To determine this score, we asked each participating customer to rate the influence of a variety of factors upon their decision to install energy-efficient equipment or systems. These factors each fall into one of three categories: automatic product factors, non-product factors, or non-automatic product factors.

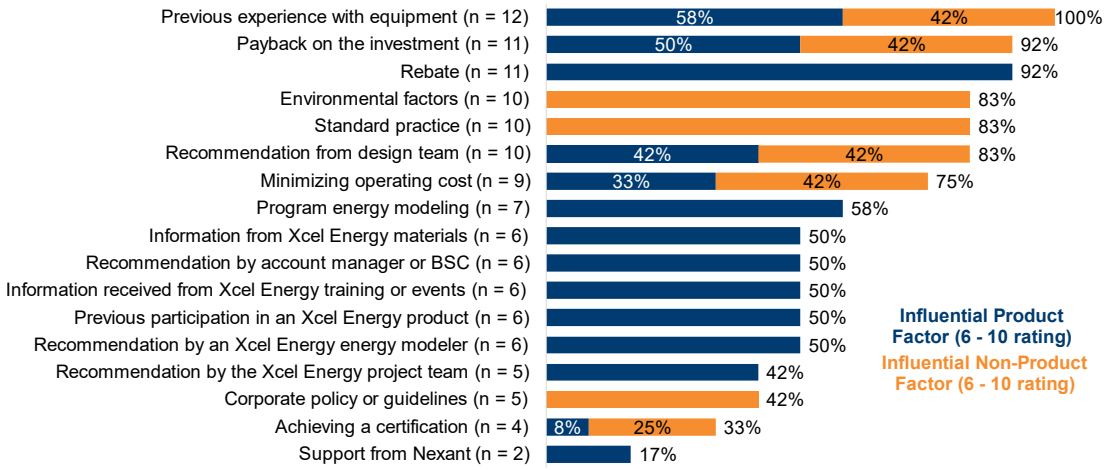
- **Automatic product factors:** These are factors that can be attributed to Xcel Energy and/or the product's activities in all cases, including: (1) the rebates offered by Xcel Energy, (2) the energy modeling offered through the product (EDA only), (3) information from Xcel Energy marketing or informational materials, (4) an endorsement or recommendation by an Xcel Energy-affiliated energy modeler (EDA only), (5) an endorsement or recommendation by an Xcel Energy account manager or an Xcel Energy Business Solutions Center representative, (6) information received from any training or events conducted by Xcel Energy email or direct mail from product staff, (7) previous participation in an Xcel Energy product, (8) an endorsement or

recommendation by the Xcel Energy project team, and (9) support from the product implementer (EEB only).

- **Automatic non-product factors:** These are factors that may influence a customer to install energy-efficient equipment or systems, but that are not related to the product. The evaluation team asked participating customers to rate the following non-program factors: (1) environmental factors like reduced carbon emissions, (2) standard practice in their business or industry, and (3) corporate policy or guidelines.
- **Non-automatic product factors:** These are factors that, depending on the specific situation, may be classified either as a product factor or as a non-product factor. Follow-up questions during the survey determined whether these factors were product factors or non-product factors. If survey respondents reported Xcel Energy played a role in these non-automatic product factors, the evaluation team included the factor as a product factor for that participating customer. If Xcel Energy did not play a role in these factors, we included the factor as a non-product factor. Non-automatic product factors included: (1) previous experience with energy-efficient equipment or systems, (2) payback on the investment, (3) recommendation from a design team member, (4) minimizing operating cost, and (5) achieving a certification like LEED.

Figure 2-2Figure 2-2 below shows product factors in blue and non-product factors shown in orange. Non-automatic product factors are shown in two colors, where each color denotes the percentage of respondents attributing a given factor either to the product or not to the product. As shown in Figure 2-2Figure 2-2Figure 2-, participating customer respondents rated the following factors as being most important to their decision to install energy-efficient equipment or systems: previous experience with energy-efficient equipment or systems, payback on the investment, and the rebate offered by Xcel Energy.

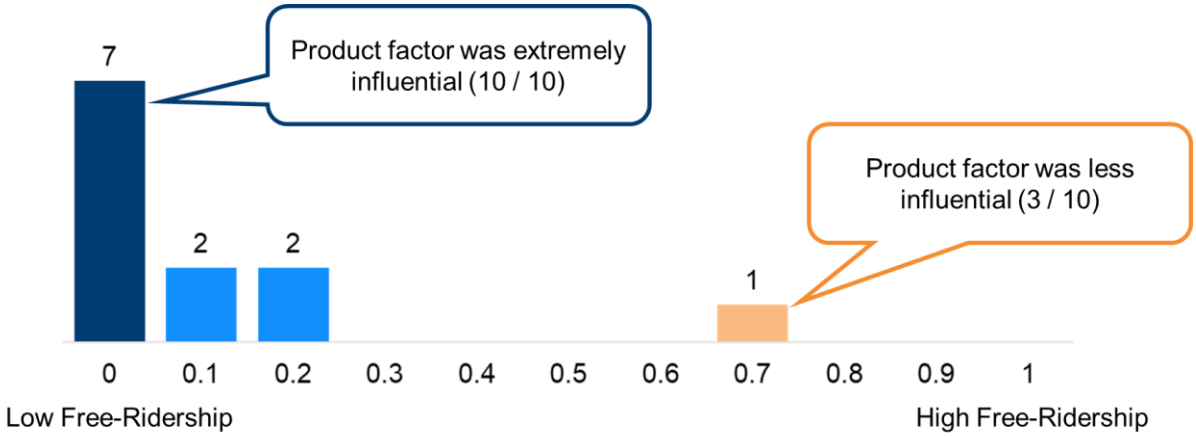
Figure 2-2. Product & Non-Product Factors for Product Components Score[4]



[4] Nexant, the EEB implementer, is now Resource Innovations.

To determine the Product Components Score, the evaluation team took the top-rated program factorFigure 2-2 and reversed the scale, so a “10” was now a “0” and adjusted the score to fall between “0” and “1.” The evaluation team did this in order to match scales with the No-Product Score and calculate free-ridership. A Product Components Score closer to 0 indicates the product has a high level of influence. Distribution details for this score can be seen below in Figure 2-3, where the number of participating customers (y-axis) are categorized by their Product Components Score rounded to the nearest tenth (x-axis). Only one customer, shown on the right, was considered a free rider based on the Program Components Score. Over half of respondents were “0%” free riders.

Figure 2-3. Program Components Score Distribution



The evaluation team averaged all of the Program Component Scores to create an overall unweighted 2020 New Construction Product Score of 0.11. Since the Product Component 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. The evaluation team averaged the Product Components Score and the No-Product Score together to estimate an initial Free-Ridership Score for each participating customer respondent. The No-Product Score is described in the next section.

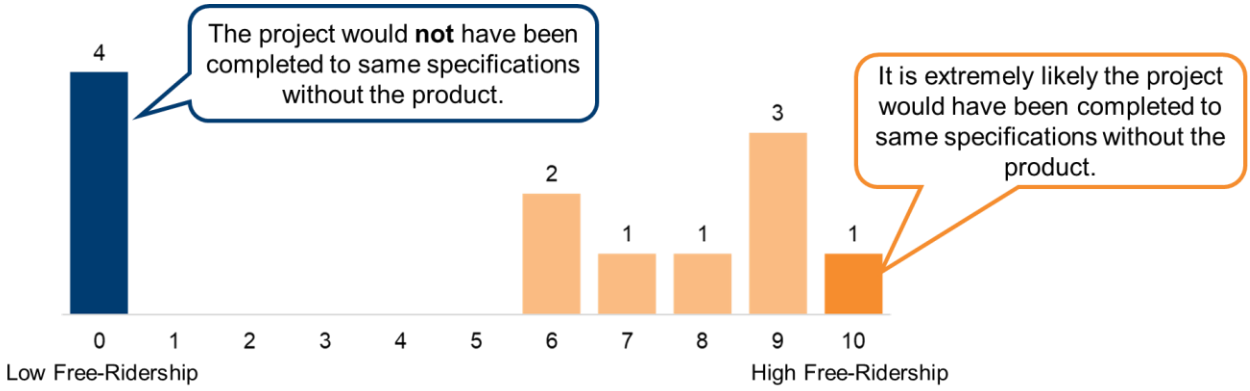
2.3.1.2 No-Product Score

The No-Product Score is a measure of how likely customers are to have built their facility to the exact same efficiency level, including installing identical equipment, without the influence of the product. In contrast to the Product Components Score, which asks how influential the product was on a customer’s decision to install equipment, the No-Program Score asks whether that decision would have been different absent the product.

When asked the likelihood they would have built their facility to the exact same efficiency level, including installing exactly the same equipment without the incentive, information, and support from the Xcel Energy New Construction Product, most customers reported they would have or might have completed their project the exact same without the product, with an average score of 5.3 out of 10, where 0 is not at all likely and 10 is extremely likely, as shown in Figure 2-. The

four respondents who were assigned a No-Product score of zero either said they would not have built their facility to the exact same efficiency level including installing the same equipment or did not know. These findings contradict the Product Components Score, where most customer respondents rated the product influential or extremely influential on their decision-making. However, taken together, these two components of free-ridership suggest that while the product influences customer decision-making, it is one of several influencing factors in the complex decision-making process of C&I new construction.

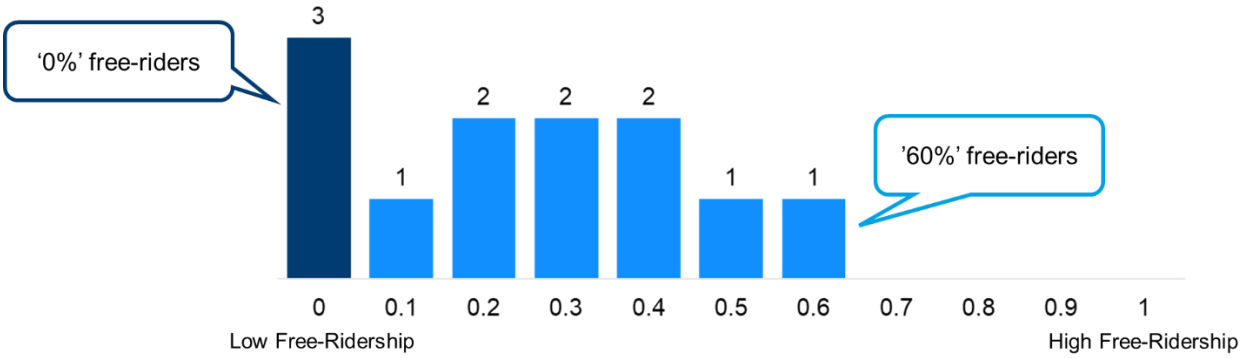
Figure 2-.: No-Product Score Distribution



2.3.1.3 Free-Ridership Adjustments due to Consistency Checks

Prior to finalizing the free-ridership score for the product, the evaluation team performed consistency checks to confirm the calculated scores for each respondent matched the experiences they reported in response to the open-ended questions included in the survey. As part of this, we also reviewed five survey recordings. Through this review, we determined that five participants had higher scores than evidenced in the consistency checks. For example, one respondent's free-ridership score was reduced from one indicating high free-ridership to one indicating low free-ridership because this respondent noted that the product was "very influential" through providing decision-making criteria and other metrics. As a result of these inconsistencies, we adjusted individual free-ridership scores so that the final range of free-ridership scores was 0.0 to 0.6, with an average of 0.25. The evaluation team felt this score better reflected the influence of the product than it did before the adjustments. Overall though, these adjustments had minimal effect on the final NTGR. Figure 2-4 shows the adjusted free-ridership score distribution after the consistency check.

Figure 2-4. Adjusted Free-Ridership Score Distribution



2.3.1.4 Final Free-Ridership

Finally, the evaluation team averaged the Product Components Score and the adjusted No-Product Score and applied sampling weights to estimate free-ridership. We weighted each score by the total savings for that project so that the score is representative of population-level savings. In other words, measures with a larger share of total savings (MMBTU) are weighted more heavily, as they have more influence on the total product savings. With the sampling weights applied, the final free-ridership score was 0.17. The evaluation team found that the weighted free ridership results were primarily driven by the fact that 99% of savings came from the EDA product component in the respondent pool, as shown in Table 2-2. Among EDA respondents, 55% of MMBTU savings came from a single EDA project with a free-ridership score of 0.00. This differs somewhat from 2020 product participation, where the EDA component accounted for 88% of kWh, 91% of kW, and 89% of Dth savings. As such this free-ridership ratio may reflect the EDA component more than the product as a whole.

Table 2-2. Weighting Percentages for Each Component

Component	MMBTU%
EDA	99%
EEB	1%

2.3.2 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. To be eligible for spillover, customers must have:

1. Installed additional efficient equipment or other energy efficiency design measures after their participation in the product;
2. Not received rebates for this equipment (and not be in the process of applying for rebates); and
3. Been influenced to install this equipment by the New Construction Product.

Since participating in the product, three customers had installed additional equipment, but only one of these customers did so without a rebate and attributed the project to their participation in the New Construction Product. This customer installed 40 high-efficiency HVAC upgrades for electric heating units. However, because this customer did not provide sufficient information (including equipment efficiency (SEER) and size) to calculate spillover, the evaluation team did not include spillover in NTGR estimation. Given the small number of upgrades attributed to the product relative to overall savings, the evaluation team does not believe these upgrades would have resulted in participant spillover. Additionally, the evaluation team found no evidence of nonparticipant spillover.

2.3.3 Market Effects

In addition to free-ridership and spillover, the evaluation team applied a 0.03 adder for market effects, due to the influence of the Xcel Energy New Construction Product on the Colorado market. While this adder is not always relevant in impact evaluations, it is appropriate in cases where the product has had significant impact on the marketplace.

Energy modelers highlighted both the support and influence the product has had on the industry broadly, as well as the importance of the product to their business' viability. The quotes below exemplify the types of responses we heard:.

> *We've seen EDA as a really great program to support the industry and to influence it in terms of delivering more energy-efficient buildings and also becoming more aware of technologies that are out there.*
>
> *[EDA] has been wonderful. It's kind of our bread and butter. It's gotten our foot in the door… I think my company has gotten established because of the Xcel EDA program. We'd probably survive if it went away, but I sure hope it doesn't.*

Energy modelers participate in a large number of projects through the product; there are four active energy modelers who are engaged in the majority of product projects, or approximately 20 projects per modeler. As such, energy modeler reflections carry significant weight and are assumed to represent product influence on a broad portion of the new construction market in Colorado; this influence described by energy modelers is estimated to account for 0.02 of the market effects adder.

Additionally, five design teams mentioned that they rely heavily on energy modelers during EDA participation as described in the below two quotes.

> *It is very easy working with modelers…I like the ability to choose various design options to determine cost versus performance and also having assistance with submitting evaluation plans to the city saying code is being exceeded.*
>
> *It's really led by the consulting engineers from [energy modeler]…they do the analysis for us of our projects so that we can meet the code requirements. And with that they, you know, [they'll] say that we've been approved for the Energy Design Assistance program or other things.*

These reflections contradict attribution to the design team found in the free-ridership analysis; 83% of customers rated recommendations from the design team an influential factor, 42% of which was an influential non-product factor. Notably, this was considered more influential than the product's energy modeling, which was an influential factor for just 58% of respondents.

Finally, three trade partners mentioned that the product is helpful in reducing value engineering of energy efficiency measures. These reflections are highlighted in the below two quotes.

> *It's helpful to be able to leverage that program when they say, 'Hey, this thing's on the VTE list. How does this impact our incentive?' And we can give them those numbers and let them make the decision and, you know, see if the incentives help to keep it on the project. And sometimes it does, which is good.*

> *Participating in the program, there's some clear parameters in terms of what's the best baseline and different cost analysis and incentives that are tied to those various options. It just helps to have the menu there for the client to make those decisions that need to be made.*

The evaluation team believes that there is some Xcel Energy influence on the market that was not captured in the free-ridership portion of the analysis, because of these trade partner reflections. The evaluation team has estimated that 0.01 of the market effects adder is due to this influence that has not been accounted for in other parts of the analysis.

2.3.4 Retrospective Net-to-Gross Ratio

Overall, the evaluation team found that the product significantly impacted participating customer decisions. Using the net-to-gross formula, we determined a NTGR of 0.86. The generalized formula the evaluation team used to determine NTGRs is shown in Equation 2-2 below.

Equation 2-2. Generalized Net-to-Gross Ratio Formula

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

Using the above formula, the evaluation team estimated the retrospective NTGR for the New Construction Product, shown in Equation 2-3. The free-ridership ratio of 0.17 here is influenced by most respondents (83%) reporting they would have or might have completed their project the same way if the Xcel Energy product hadn't existed. At the same time, non-product factors such as standard practice and environmental factors influenced customer decision-making. The evaluation team found minimal evidence of spillover, resulting in a spillover score of 0.0. The evaluation team also added a 0.03 adder for market effects to account for the impact the product has had on the new construction market over time.

Equation 2-3. New Construction Product Net-to-Gross Ratio

$$NTGR = 1 - (.17) + (.00) + (.03) = .86$$

2.4 Prospective Net-to-Gross Considerations

The evaluation team also examined current and expected future market conditions and expected product changes to recommend a prospective NTGR. The evaluation team recommends that Xcel Energy continue to use the retrospective NTGR of 0.86 prospectively. These results are based on our findings from trade partner interviews and participating customer surveys. The recommended prospective NTGR is on the higher end of NTGRs applied to peer programs across the country, based on a benchmarking analysis conducted by the evaluation team. This suggests that though the retrospective and prospective NTGRs are lower than what was used by the product prior to this evaluation, they are appropriate for current new construction markets. This is likely due in part to the close relationship the product has with participating energy modelers, which differs somewhat from peer program structures.

The remainder of this section presents findings related to trade partner design decisions, and the influence of energy modelers on design team decision-making. It then presents the prospective NTGR findings and concludes by comparing these findings to peer utilities.

2.4.1 Participating Trade Partner Design Decisions

The evaluation team found that trade partner design decisions are most often made based on cost, jurisdictional goals and energy codes, and owner preference. One energy modeler discussed making decisions based on future or anticipated jurisdictional requirements as well. The two quotes below highlight these reflections:

> *So, how do you do what's right for the project now, but still be prepared for the changes coming. If we put this in now, what do we need to do to meet 2035 requirements.*

> *It varies by jurisdiction…with the aggressive energy codes…they [design teams] start talking about energy at the very beginning…they know more what they're doing. They're a little more comfortable.*

Another energy modeler underscored the varied owner motivations, including commitment to community, energy codes, and market differentiation:

> *It varies a lot from client to client… we see everything from… commitment to the community as well as just the environment… and then we see the energy code driving [energy efficiency decisions]… [the energy code] does push teams to consider what they're building, but then to go beyond code … [and] market differentiation… especially like office or multifamily… some of the building types that are very common… some owners will want to do something different, so they stand out. That might be a certification. It might be a tech, an energy-efficient technology, but you know, something that they can market.*

These trade partner reflections highlight the ways in which energy codes drive energy efficiency, and energy efficiency is embedded in customer and jurisdictional goals. Trade partner reflections also suggest that the decision-making process for C&I new construction is complex,

involving many factors, including many that are not directly related to the product. This outside influence tempers the influence the product has on design decisions. As discussed previously, Xcel Energy included a Codes and Standards Compliance component in the New Construction product starting in 2021, which proactively supports jurisdictions that are considering or have adopted a high-performance building energy code. Therefore, the evaluation team expects that energy code advancement and jurisdictional goals will continue to drive energy efficiency in future years in Xcel Energy's service territory, and will continue to be a driver of free-ridership. While this will limit product influence, it does not negate the need for incentives that can encourage projects to exceed the minimum requirements of the applicable building energy code.

2.4.2 Energy Modeler Influence on Design Teams

As outlined in Section 2.2.3, design teams mentioned that they rely heavily on energy modelers during EDA product participation. This suggests that the product model of working with pre-approved, independent energy consultants to implement the EDA product is achieving product objectives. These energy modelers are able to provide quality design assistance to design teams and customers in a way that, in conjunction with product rebates and other support, influences design decisions. The evaluation team expects this strategy to drive product influence in future years and lead to similar market effects as the ones producing the market effects adder included in our NTGR estimation.

2.4.2.1 Recommended Prospective Net-to-Gross Ratio

The evaluation team recommends using the same retrospective NTGR, 0.86, prospectively if Xcel Energy makes no additional changes to the program design. This is due to opposing forces that the evaluation team expects will impact the product in the future. The program design of working with pre-approved, independent energy consultants to implement the EDA product is achieving product objectives and influencing building design decisions. However, the evaluation team anticipates that program influence will be tempered by updated energy codes driving energy efficiency, and that energy efficiency will continue to be embedded in customer goals in future years. Taken together, we expect these factors to balance each other and have a negligible impact on the NTGR.

2.5 Peer Utility Net-to-Gross Comparisons

The retrospective and prospective NTGR is at the upper end of the range of NTGRs for peer utilities interviewed through this evaluation effort. As shown in Table 2-3, the peer utility NTGRs vary widely. There are peer utilities with lower, higher, and equivalent NTGRs. The most likely driver of the higher NTGR is the close relationship between energy modelers and the product, as discussed previously. The peer utilities vary in their program delivery model for components that include energy modeling. Utility A, B, D and E are open to all modelers and allow customers to choose their own energy modeler. Utility F has an implementer that does all of the energy modeling. Xcel Energy allows customers to work with a group of pre-approved energy modelers. All but two programs (Utility D and Utility F) allow any size building to participate; Utility D requires buildings to be 10,000 square-feet or larger, and Utility F requires buildings to be 5,000 square-feet or larger. Region A for Utility B is on an older energy code, which may be driving the

higher NTGR. As discussed previously, updated energy codes were a factor outside of the product found to drive design team decision-making.

Table 2-3. 2020 Peer Utility NTGR for Programs that Include Commercial New Construction

	Utility					
	A	B	C	E	F	Xcel Energy
Overall Program NTG	1.00[a]	Region A: .90 Region B: .74	Overall: .58 High-Rise Multifamily: .75	.90[a]	.70	.86

[a] *This NTGR is stipulated for all DSM programs*

3 Process Evaluation

TRC conducted a process evaluation to determine how Xcel Energy can optimize the design and delivery of the New Construction Product to its customers. Specific research objectives of the process evaluation include the following:

- Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and what they would like to see included in the product.
- Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.
- Identify where members of the building community (e.g., customers, design teams, energy modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle, and infrastructure readiness).
- Understand the extent to which increasingly stringent energy code adoption and rising baselines serve as a barrier to participation among customers.
- Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, level of savings achieved above code, and rebate amounts.
- Identify possible product improvements that would increase product savings, with a focus on peak demand savings and time-of-use (TOU), and support local communities in meeting their energy goals.

To accomplish these objectives, the evaluation team elicited feedback from product staff, participating customers, participating trade partners in the Xcel Energy Colorado territory, nonparticipating trade partners[5] in the Xcel Energy Colorado territory, and peer utilities. This section presents key findings from the process evaluation, the evaluation team's approach to conducting the process evaluation, and specific findings relating to each evaluation objective. Within the sub-sections for each objective, the evaluation team has included data from all relevant data collection efforts. The 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 chapter.

3.1 Key Findings

The evaluation team found that, overall, market actors were very satisfied with the current product operations, and staff reported product processes were running smoothly. Customers and participating trade partners both noted that the product was easy to participate in and that

[5] The evaluation team originally planned to conduct non-participating customer interviews, however we received insufficient feedback from this group. As a result, we contacted non-participating trade partners to better understand new construction practices in Colorado.

they were happy with their experiences. Additional key findings from the process evaluation research included:

- **Awareness and Motivation:** Participating customers primarily learned about the product through consultants (i.e., energy modelers or product implementers) or Xcel Energy staff. This suggests that personal contact is key to encouraging participation in the product. Financial incentives, however, were the primary motivator for both participating customers and their design teams to participate in the product.
- **Satisfaction:** Participating customer survey respondents and trade partner interviewees expressed satisfaction with the product. Some customers and participating trade partners, however, expressed a desire for improved communication from Xcel Energy staff.
- **Peer Utility Program Implementation:** Utilities varied in their approach to energy modeling. However, two peer programs allow participating energy modelers to use their choice of energy modeling software, and one allows energy modelers to choose from a pre-approved list of energy modeling software. Utilities also varied in how they track project progress; however, two use a trade partner portal used for all their business programs. These peer utility models offer alternate options to the EDAPT portal used by the Xcel Energy product for energy modeling and project tracking.
- **Electrification:** Participating customers were somewhat to very familiar with electrification, however, some provided definitions of electrification that suggest some misunderstanding. Participating customers also expressed interest in a variety of electrification technologies. Participating trade partners noted that they receive very little pushback from their clients related to electrification.

In Section 3.2, we describe the overall approach used for the process evaluation research activities and, beginning in Section 3.3, we provide detailed results from all of these activities.

3.2 Approach

To accomplish the objectives for the Colorado New Construction Product Impact and Process Evaluation, the evaluation team completed a suite of intersecting and complementary research activities in 2021. Detailed information on the sampling approach used for our research can be accessed in the evaluation plan, found in Appendix A. The following discussion highlights the research topics contributed by each research activity: staff interviews, participating customer surveys, trade partner interviews, nonparticipating trade partner interviews, and peer utility interviews.

3.2.1 Staff Interviews

The evaluation team conducted five telephone interviews with five Xcel Energy staff managing and implementing the C&I New Construction Product in Colorado, including:

- The Xcel Energy Product Manager
- The Strategic Segment Team Lead
- Two Product Engineers

- An Account Manager, selected by the Xcel Energy Product Manager

These staff interviews covered the following topics:

- Description of the product's process and goals
- Staff perceptions of the product's challenges and successes
- Product staff evaluation priorities

Appendix B.1 presents the interview guide used for these discussions and Appendix C.1 provides results specific to this research activity.

3.2.2 Participating Customer Surveys

The evaluation team conducted telephone surveys with product participants using customer records from Xcel Energy for the sample frames. The evaluation team spoke to 12 respondents which provided a 90% level of confidence with a minimum of +/- 23% relative precision. The evaluation plan used for this project can be found in Appendix A.

For the purposes of this evaluation, the evaluation team defined a participating customer as any customer who participated in the New Construction Product between October2019 and March 2021. We stratified the participating customer sample by which component the customer had participated in, EDA or EEB, and we also attempted to contact participating customers from a variety of market segments for the EDA component. We designed the resulting participating customer survey to address the following process topics:

- **Awareness, Motivations, and Barriers:** The evaluation team assessed how customers became aware of the New Construction Product We also asked customers about their motivations to participate in the product to better understand if any particular product elements influenced them more than others. We explored participating customer barriers to installing energy-efficient equipment and systems.
- **Product Experience and Satisfaction:** The evaluation team discussed participating customers' experiences and satisfaction with various elements of the product. We explored how customers experienced working with energy consultants, product implementers, and trade partners. Additionally, we asked customers if there were any improvements that Xcel Energy could make to improve their satisfaction with the product.
- **Jurisdictional Goals (e.g., Electrification)**: The evaluation team asked customers if they were familiar with the term "electrification" and if they had a favorable or unfavorable opinion towards it. We also explored if customers had any interest in installing electrification technologies.
- **Participation in Related Products:** The evaluation team asked participating customer respondents if they participated in any other energy efficiency products offered by Xcel Energy and if they saw any opportunities for collaboration.

Appendix B.2 contains the survey instrument used for the participating customer survey and Appendix C.2 provides results related specific to this research activity.

3.2.3 Nonparticipating Trade Partner Interviews

The evaluation team conducted 10 in-depth interviews with nonparticipating trade partners. For the purposes of this research, the evaluation team defined a nonparticipating trade partner as any trade partner who had never participated in the product, or had participated in the past but participated infrequently and was not a current active participant (i.e., had no projects through the product[6] currently and had not participated in the past few years). This research addressed the following topics:

- **Awareness and Motivations to Participate in the Product:** The evaluation team asked nonparticipating trade partners if they were aware of the product and what, if anything, would motivate them to participate in the New Construction Product. We also asked trade partners about past participation, if applicable**.**
- **Customer Decision-Making and Barriers to Energy-Efficient Designs:** The evaluation team discussed customer awareness, motivations, and barriers to pursuing energy efficient designs with nonparticipating trade partners. We also asked them about their own barriers and motivations to recommending energy-efficient designs.
- **Energy Codes and Electrification:** The evaluation team asked nonparticipating trade partners about their familiarity with and opinion of beneficial electrification technologies. We explored the extent to which trade partners are seeing shifts towards electrification and electric vehicle readiness in their businesses. We also discussed the impact of updated energy codes on new construction.

Appendix B.3 presents the interview guide used for the nonparticipating trade partner research, and Appendix C.4 presents results related to this research activity.

3.2.4 Participating Trade Partner Interviews

In addition to the customer data collection efforts mentioned above, the evaluation team conducted 14 in-depth interviews with participating trade partners, including nine design team professionals (e.g., architects and engineers) and five energy modelers. The trade partner research addressed the following process topics:

- **Awareness and Motivations:** The evaluation team asked participating trade partners how they became aware of the product and what their motivations were to participate in the New Construction Product. It also asked trade partners about how they decided to participate in the EDA or EEB component and whether their participation in the product has changed over time.
- **Customer Decision-Making and Barriers:** The evaluation team assessed trade partner feedback on customer awareness, motivations, and barriers to product participation and pursuing energy-efficient designs. This provided insight into broader market experiences to help supplement findings from the participating customer surveys.

[6] Two non-participating trade partners who had participated previously were involved with the EDA component only.

- **Product Experience/Satisfaction:** The evaluation team discussed participating trade partners' product experiences and their satisfaction with the product, including their interactions with product staff (whether it be with Xcel Energy, the EEB implementer, and/or energy modelers), incorporation of energy-efficient equipment or systems into the building design, and rebate structure and levels.
- **Energy Codes and Electrification:** The evaluation team asked participating trade partners about their awareness and understanding of electrification. We explored the extent to which trade partners are seeing shifts towards electrification and electric vehicle readiness in their business. We also discussed the impact of stringent energy codes on new construction in connection with the ability to participate in the New Construction Product.

Appendix B.4 presents the interview guide used for the trade partner research, and Appendix C.4 provides results related specifically to this research activity.

3.2.5 Peer Utility Benchmarking Interviews

Last, the evaluation team interviewed peer utilities. The objective of the peer utility benchmarking task was to understand how peer utilities approached key issues related to implementing commercial new construction programs. The evaluation team collaborated with the Xcel Energy product manager to identify six peer utilities to include in its sample, of which the evaluation team spoke to five. We considered the following criteria when selecting peer utilities: similar program designs, programs known to have best practices or data tracking tools Xcel Energy is interested in pursuing, utilities that operate in similar territories (including the geography, the number of customers, and/or the number of commercial construction starts in its territory), and utilities that include code adoption and support activities as a component of their new construction programs, or as a separate stand-alone program.

The evaluation team recruited peer utility staff in key management roles related to commercial and industrial new construction programs. Interviews with these staff focused on the same discussion topics explored in the interviews with Xcel Energy customers and trade partners, but emphasized the following additional research objectives specific to peer benchmarking interviews:

- **Program Design:** How do peer utilities account for increasingly stringent code adoption and rising baselines within their C&I new construction programs?
- **Electrification and/or Other Jurisdictional Goals:** What have other utilities done to support jurisdictions in their goals related to electrification and EV readiness?

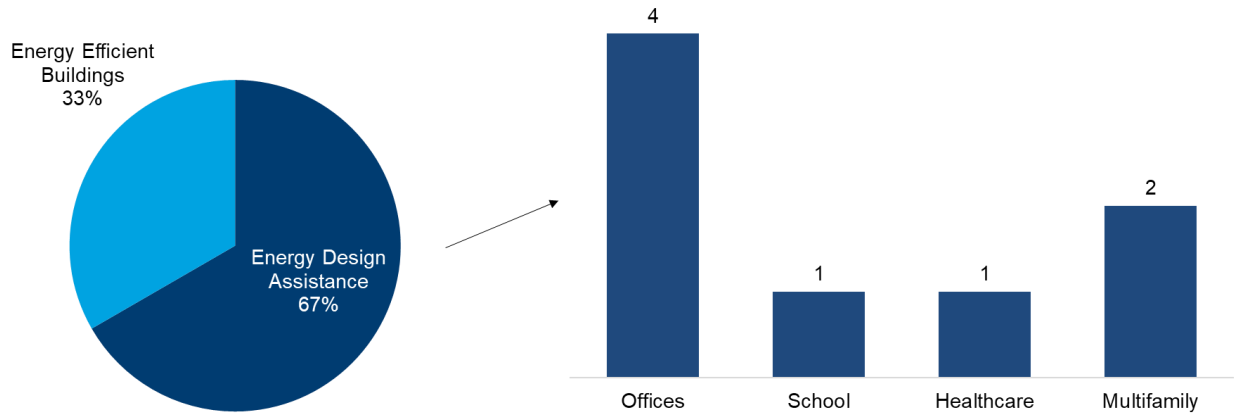
Appendix B.5 presents the interview guide used for the peer utility research, and Appendix C.5 provides results related specifically to this research activity.

3.3 Participating Customer Characteristics

The evaluation team asked participating customers about the characteristics of their businesses to better understand who participated in the product. As shown in Figure 3-1, the evaluation

team found that most respondents participated in the EDA component (67%); this agrees with the overall population where 71% of participating customers took advantage of the EDA component. For customers who participated in the EDA component, the most common building type was Offices, followed by Multifamily; building type information was not available for the EEB component.

Figure 3-1. New Construction Product Participating Customer Survey Respondent Characteristics



3.4 Product Experience

This section outlines qualitative findings related to product experience, awareness and motivations, and satisfaction. The evaluation team included findings from the participating customer surveys and participating trade partner interviews, as well as nonparticipating trade partner interviews, as applicable. Overall, rebates were highly motivating for customers, and respondents were satisfied with the product. Nonparticipating trade partners were largely unaware of the product, suggesting additional outreach may be needed to increase participation among nonparticipating trade partners and customers.

3.4.1 Product Awareness & Motivations

The first process objective was to understand how customers became aware of the product. This includes understanding what motivates customers and participating trade partners to participate in the product, and at what point customers are thinking about energy efficiency design decisions. Our research indicates that customers learn about the product through consultants or Xcel Energy staff. This suggests that personal contact is key to encouraging participation in the product. Financial incentives however were key motivators for both participating customers and their design teams to participate in the product. Half of nonparticipating trade partners (n = 5) were unaware of the product. However, most (n = 9) expressed a desire to learn more and highlighted their preference for learning through in-person or virtual information sessions, or phone calls. We provide additional detail on product awareness and motivations in the following sections.

3.4.1.1 Participating Customer Product Awareness

The evaluation team asked participating customers about how they became aware of rebates for the New Construction Product. Understanding product awareness helped us to determine which Xcel Energy efforts were most effective. Respondents heard about the product from Non-Xcel Energy consultants (n = 3), Xcel Energy program staff (n = 3), or their Xcel Energy account representatives (n = 3), as shown in Figure 3-2 below. No respondent indicated that they heard about the product through marketing collateral such as the Xcel Energy website, or through an Xcel Energy event or other industry event. As discussed previously, this suggests that interpersonal contact is key to encouraging product participation.

Figure 3-2. Participating Customer Sources of Product Awareness

In order to gauge whether the product is engaging customers early enough to significantly influence design decisions, the evaluation team also asked customers whether they learned of the product before or after they began to think about including energy-efficient design features. We found that most respondents first learned of the product before they began to think about including energy-efficient features in the design (n=3) or during the design phase (n=2). However, two respondents noted that they learned about the product *after* they began thinking about including energy-efficient design features.

3.4.1.2 Nonparticipating Trade Partner Awareness

The evaluation team asked nonparticipating trade partners about their awareness and perceptions of the product. Only two of the ten nonparticipating trade partner interviewees had participated in the EDA component in the past. These two interviewees were not current active participants; one had last participated in 2017 and one had participated a few times over the last decade, but not within the past few years. One of the two interviewees who had participated in the product previously remembered details about the product, including size requirements and the fact that there was an incentive; the other interviewee did not remember the details of their experience.

Five of the eight nonparticipating trade partners who had never participated (n = 5) were unaware of the product. Of those interviewees that were unaware of the product, two were surprised that energy consultants and engineers they had worked with in the past had not brought the product to their attention. This finding suggests that marketing and outreach

conducted by participating energy modelers may miss eligible projects. However, some interviewees (n = 3) also believed that their lack of awareness was due to the fact that decisions around energy-efficient systems and equipment, as well as applying for rebates, are the client's responsibility. The quotes below demonstrate this sentiment:

> *Clients are always driving their wants and desires, and they're the ones determining whether they want to go beyond the minimum energy code requirements. That's driven by the clients more so than us architects.*

> *I see a lot of that spearheaded by our clients. They'll look into it and they'll kind of lead that charge[…] we just don't hear what the conclusion of it [is].*

The evaluation team also asked nonparticipating trade partner interviewees about which component they would be interested in participating in (n = 6), or discussed what kind of energy modeling they had done in the past (n = 4) to determine which component would be of more interest to trade partners. We found that interest in product components varied. Two interviewees were interested in just the EDA component, two were interested in just the EEB component, and two were interested in both. Out of those that were not asked about which component they were interested in directly, three discussed design practices that would be relevant to EDA involvement, including previous work with energy modelers. One trade partner discussed interest in prescriptive measures that would suggest this interviewee's projects would be a better fit for EEB. One interviewee reiterated that they felt EDA would be more appropriate for their work because choosing specific equipment was the clients' and engineering firm's responsibility. They noted that demonstrating the energy savings associated with their work would require energy modeling, as shown in the quote below.

> *As architects we're not going to be as involved in the equipment selection[…] but we would be more involved in the building envelope itself, so the things that involve energy modeling […] and things of that nature would be more where our participation would lie.*

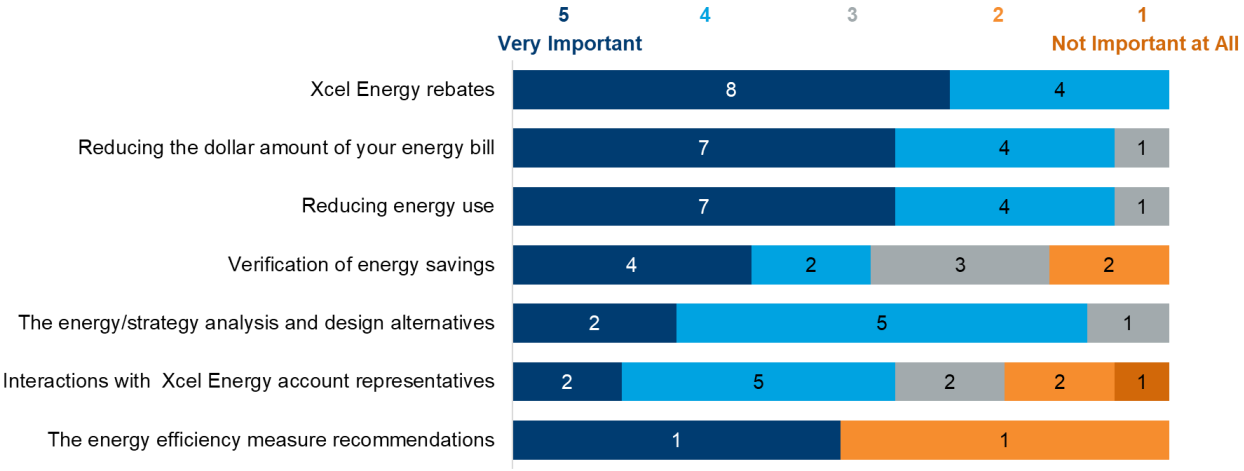
The evaluation team also asked nonparticipating trade partners if they would be interested in hearing more about the product, and if yes, how they would prefer to receive additional information. All but one interviewee was interested in learning more about the product. These interviewees discussed their preferences for learning, which included lunch-and-learns (n = 3), virtual or in-person information sessions (n = 3), or continuing education credit opportunities (n = 3). One person also mentioned the American Institute of Architects (AIA) as a venue for opportunities to learn more, suggesting that there are existing educational platforms that the product could tap into for trade partner education. The one interviewee who was not interested in learning more about the product said that these types of decisions were client driven.

3.4.1.3 Participating Customer Motivations

The evaluation team asked participating customers what motivated them to participate in the product. Participating customers were asked to rate the importance of seven factors on a scale of 1 to 5, where 1 is "not at all important" and 5 is "very important." Figure 3-3 below shows the results to this question. Xcel Energy rebates was the highest-rated motivating factor, with an

average score of 4.7 out of 5, followed by reducing energy use (4.5 out of 5) and reducing the dollar amount of your energy bill (4.5 out of 5). These findings underscore that, while interpersonal relationships are important for increasing product awareness, demonstrating savings opportunities is critical to drive product participation.

Figure 3-3. Participating Customer Motivations to Participate in Product



3.4.1.4 Participating Trade Partner Motivations

The evaluation team also asked participating trade partners, both design teams and energy modelers, what motivates them to participate in the product. Trade partners discussed a variety of motivations for participating in the product, including product rebates (n = 4) and meeting their client's energy efficiency goals (n = 4). Design teams enjoyed being able to provide clients with these product benefits as shown in the below two quotes.

> *It's a very powerful, very powerful program, and it helps me be a more effective consultant because we have the power of the rebates and Xcel Energy helping to foot the bill.*

> *For the benefit of the client – most of clients like the feeling that they are contributing to being energy conscious.*

3.4.2 Satisfaction & Experience

The second major objective of the process evaluation was to research satisfaction and product experiences. The evaluation team found that, overall, both participating customers and participating trade partners were satisfied with the product. Participating customers found most activities easy to complete, although some customers (n=3) found contacting Xcel Energy to be somewhat difficult. Those respondents who found contacting Xcel Energy staff somewhat difficult were also somewhat dissatisfied with their interactions with product staff. This suggests that interactions with Xcel Energy staff negatively impacts respondent experience. The remainder of this section explores satisfaction results by market actor. The section ends with a

discussion of peer utility programs, what modeling software is allowed by each program and how project progress is tracked.

3.4.2.1 Participating Customer Satisfaction

Overall, participating customers were very satisfied with the product, with an average satisfaction score of 4.4 out of 5. No participating respondents reported that they were dissatisfied with the product.

The evaluation team also asked participating customers about their satisfaction with various product elements on a scale of 1 to 5, with 1 being very dissatisfied and 5 being very satisfied. As shown in Figure 3-4, no participating customer was very dissatisfied with any product element. Rebates and interactions with energy modelers received the highest satisfaction ratings, 4.4 out of 5 and 4.5 out of 5 respectively. Though dissatisfaction was limited, some respondents were somewhat dissatisfied with energy savings (n=1), incentive structure (n=1), rebate timeliness (n=1), and interactions with product staff (n=3).

Figure 3-4. Participating Customer Satisfaction with Various Product Elements

The three participating customers who were dissatisfied with their interactions with product staff discussed their difficulty finding the correct person at Xcel Energy, slow responses to questions, and more general billing concerns. The three quotes below provide more detail on these participating customer concerns.

Just my experience in general – f I go through a consultant, I don't have to talk to Xcel directly, it's much better. But if I have to try and find the right person at Xcel, it's quite difficult.

On [my interactions with Xcel Energy Program staff], [they are] just not quite able to get back to us…as quickly as we would have liked

It was just more with billing…going from the construction side to the management side. [Xcel Energy] could not connect us with the right accounts, and we ended up having bills in collections… where we were paying them, but they still went to collection. So we could not get to the right representation where we could avoid those mistakes. We still have one open account right now that we are dealing with customer service on the Xcel side.

Respondents most liked the rebate, the easy process, and saving money. The dollar amount of the rebate was the best part of the product overall, according to two respondents. The following quotes represent these sentiments.

The process was relatively easy on our side.

I like seeing how we can make a building that's brand-new construction as energy-efficient as possible for that time, and be able to plan and set up our building for energy efficiency going into the future.

When the evaluation team asked participating customers what Xcel Energy could do to improve their satisfaction, four respondents provided suggestions, however their responses varied. However, two of the four responses involved improving communication between customers and Xcel Energy. One customer suggested providing more follow-up information as a project progresses. The other respondent suggested improving the responsiveness, involvement, and knowledge of strategic account representatives. We've included quotes from both respondents below:

More information or follow up as the job proceeded, I had to chase them down for information.

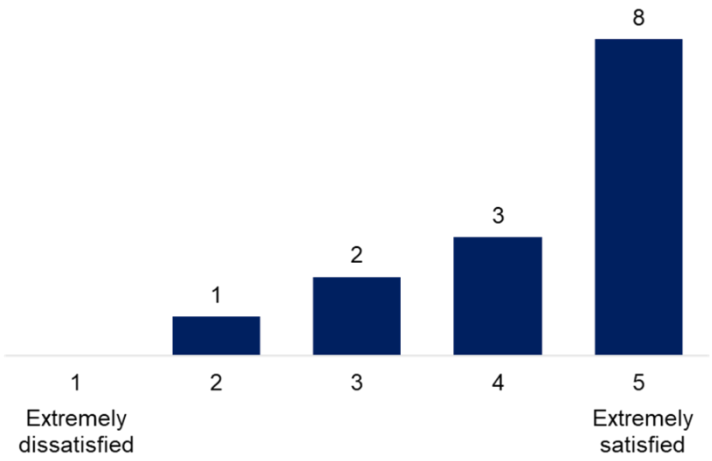
I would just say responsiveness and involvement with strategic account representatives…their technical understanding of the incentive programs needs to be improved.

3.4.2.2 Participating Trade Partner Satisfaction

The evaluation team also discussed product satisfaction with participating trade partners. Overall, trade partners were satisfied with the product, with 11 of 14 interviewees rating the product as somewhat or extremely satisfied; average trade partner product satisfaction was 4.3 out of 5. Only one energy modeler was somewhat dissatisfied with the product. This energy modeler participated in the product infrequently, suggesting that there may be a learning curve

to product systems and processes, including the OpenStudio energy modeling software, discussed in more detail below. Figure 3-5 shows the distribution of trade partner satisfaction.

Figure 3-5. Trade Partner Overall Product Satisfaction



The evaluation team also asked participating trade partners about their satisfaction with various product elements. Design teams were particularly satisfied with their interactions with energy modelers, as shown in the below quote. On average, design teams rated these interactions a 4.8 out of 5.

> *It is very easy to work with the modeler. We like the ability to choose various design options to determine cost versus performance and having some assistance with submitting the evaluation plan to the city.*

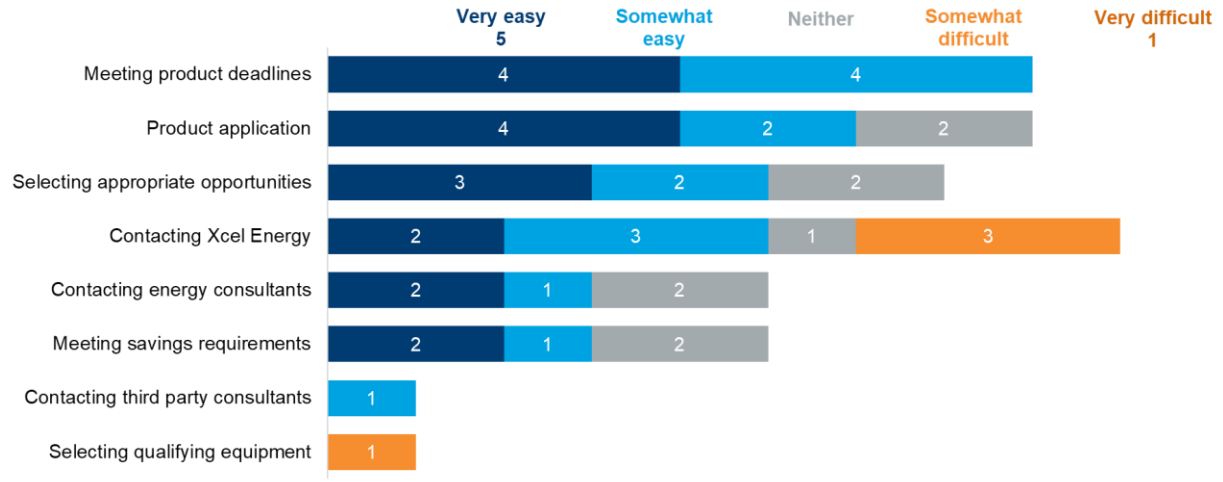
However, some energy modelers (n=2) were less satisfied with the product due to the product's reliance on the OpenStudio software and EDAPT portal, as shown in the below quote.

> *The website and tools make us spend more time than we would be doing elsewhere. Also, the cutoffs for consultant fees and percentage of incentives have been reduced.*

3.4.2.3 Participating Customer Product Experience

The evaluation team also asked participating customers about their experience with the product, including how the product's processes are working for them. Participating customers were asked to rate how easy or difficult tasks were to complete on a scale of 1 to 5, where 1 was "very difficult" and 5 was "very easy." Respondents found most product activities to be very or somewhat easy, as seen in Figure 3-6 below.

Figure 3-6. Participating Customer Product Experience



Three respondents rated contacting Xcel Energy and selecting qualifying equipment as somewhat difficult. These three respondents were also dissatisfied with their interactions with product staff. The fact that contacting Xcel Energy is an anomaly in an otherwise easy customer experience suggests that some focus should be paid to improving lines of communication between customers and Xcel Energy. Although one customer's primary issue was with accounting and billing, this customer still connected this experience to Xcel Energy customer service broadly and their own product experience specifically. The three quotes below provide additional detail on this difficulty:

> *It's just never easy to get in touch with the right person at Xcel Energy.*
>
> *For that particular case, it was just a matter of their availability. They eventually did get back to us but took a little bit longer than we were looking for.*
>
> *It is hard to find someone knowledgeable enough about the actual processes. It has more to do with accounting and being able to process bills correctly. The customer service on Xcel Energy's side has been very poor.*

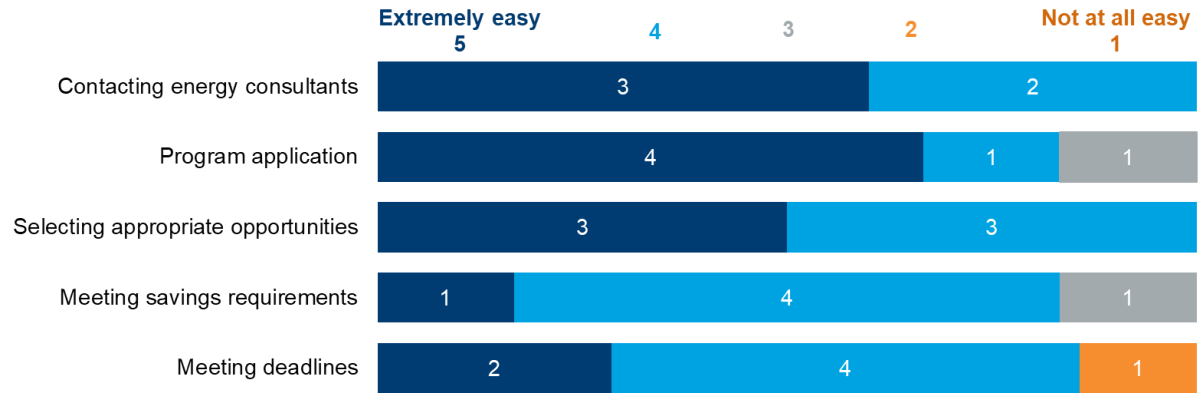
The evaluation team also asked participating customers if the project took less or more time than they anticipated to complete, from the time work started to the time they received the rebate. Most respondents (n = 7) said that it was about the time they expected. While two respondents said that it took more time than expected, no respondent reported that it took much more time than expected.

3.4.2.4 Participating Trade Partner Product Experience

The evaluation team also asked participating trade partners about their product experience. Trade partners were asked to rate how easy or difficult it was to complete product tasks on a scale of 1 to 5, where 1 is not at all easy and 5 is extremely easy. The highest ranking items that were easiest to complete included the program application, selecting energy efficiency

opportunities, and contacting energy consultants, as seen in Figure 3-7 below. No product element was rated not easy, suggesting that product processes are working well for trade partners.

Figure 3-7. Participating Trade Partner Product Experience



3.4.2.5 Peer Utility Experiences with Program Implementation

Xcel Energy currently uses the Energy Design Assistance Program Tracker (EDAPT), an integral tool for tracking product data throughout the project lifecycle, developed by the National Renewable Energy Lab (NREL). This tool tracks project progress, including preliminary and final energy analyses, construction document reviews, and measurement and verification (M&V). NREL will stop hosting EDAPT in October 2022, however a third-party is in the process of taking over this service. The product currently uses OpenStudio for energy modeling, as it is compatible with the EDAPT platform. We asked peer utilities about their approach to project tracking and energy modeling. This section first presents findings related to processes used by utilities to track project process, and then findings related to the modeling software that peer utilities use. We have summarized these results in Table 3-1 below.

Peer utility interviewees reported that trade partners participating in their programs used a variety of modeling software. Three of the five utilities we spoke to (Utility A, Utility B, Utility D) allow energy modelers they work with to use multiple software types. Two of these three utilities (Utility A, Utility B) do not have restrictions on what kind of modeling software their energy modelers could use. However, Utility A makes recommendations to energy modelers based on the software internal engineers were familiar with, including eQUEST, EnergyPlus,[7] and TRACE. Utility D provides energy modelers with a list of four or five pre-approved software options, including eQUEST, TRACE, EnergyPlus, and Carrier HAP, to choose from. Utility F has all of their modeling completed by the program implementor, who uses an online interface called NEO that runs off of DOE-2. NEO is a web interface that allows them to make changes in real-time at design meetings. For more complex projects, just the DOE-2 software is used. Utility E's EDA-type program is currently on hold, however previously energy modelers were required to

[7] DOE does most of its work with EnergyPlus in OpenStudio. However, EnergyPlus is compatible with several graphical interfaces, including BuildSimHub, DesignBuilder, and TRACE 3D Plus.

used OpenStudio for program projects. Utility E reported that OpenStudio was not popular among participating energy modelers, and energy modelers typically only used OpenStudio for projects rebated through the program.

Table 3-1. Peer Utility Modeling Software & Project Tracking

Utility	Modeling Software	Tracking System
Utility A	Open to use whichever software meets guidelines	Trade partner portal with dashboard for all project progress
Utility B	No limitations	Tracked by implementation contractor using an internal system
Utility D	4 or 5 approved models	Applications for performance-based component not submitted until end of project; Prescriptive component tracked through trade partner portal
Utility E	EDA-type program currently on hold, previously used OpenStudio for program projects	Used EDAPT previously
Utility F	Implementor completes modeling on online interface called NEO	Tracked by implementation contractor using internal project management tool

Peer utilities also reported a variety of project tracking processes; however, two of the five utilities relied on trade partner portals to track project progress. The following list describes how the peer utility track project progress (additional detail in Table 3-1):

- Two utilities tracked their application progress using an internal system managed by the implementation contractor.
- One utility had used EDAPT previously to track project status. This utility paused their EDA-type program in part due to uncertainty with the EDAPT platform and is currently evaluating new processes and tools.
- One utility allows customers and/or trade partners to track progress through the trade partner portal, which is the same portal the utility uses for all their energy efficiency programs. The portal includes a dashboard for all projects that shows their individual progress (i.e., in review, review complete, processing).
- One utility uses different processes for their performance-based and prescriptive components. For the performance-based component that includes energy modeling, the modeling analysis is submitted at the same times as the program application, which occurs at the end of the project. Project progress for the prescriptive/custom component is tracked through their trade partner portal. For this track, trade partners must submit a pre-notification application in the early design phase.

3.5 Barriers to Participation

The third process objective was to identify barriers to participation among participating customers, participating trade partners, and nonparticipating trade partners. The evaluation team found that participating customers didn't experience major barriers to including energy-efficient equipment and systems in their designs; challenges mentioned primarily related to cost barriers to including solar in participating projects. Trade partner barriers to participation included challenges with meeting Terms and Conditions set by Xcel Energy for product participation and the difficulties with using product modeling software discussed previously. Nonparticipating trade partners discussed their lack of awareness as their biggest barrier to participation and discussed their customers' barriers to including energy-efficient equipment systems in their designs, which included upfront cost and a split incentive. The remainder of this section provides additional detail on these barriers by market actor.

3.5.1 Participating Customer Barriers

The evaluation team asked participating customers if they considered installing any additional energy-efficient equipment, systems, or designs beyond what they did install, and if yes, why they decided not to install the equipment. Only four customers mentioned considering additional equipment; two of these customers considered installing solar panels, one considered installing an additional pump, and one did not specify the equipment reviewed. One customer said that the barrier to installing this equipment was upfront cost, while the other noted that the technology was a "bleeding edge" technology.[8] The remaining two could not recall the reason for foregoing this installation. These findings suggest that participating customers experience few barriers to installing energy-efficient equipment, however barriers that do exist include cost and technology limitations.

3.5.2 Participating Trade Partner Barriers

Trade partner barriers differed by the type of trade partner interviewed: either design teams or energy modelers. Design teams generally experienced fewer, and minor, barriers to participation. Energy modelers experienced challenges with the modeling software requirements and Terms and Conditions for participation. Design team and energy modeler barriers are detailed in the following sections.

3.5.2.1 Design Teams

Design teams did not list any major barriers to participating in the product; as discussed previously, satisfaction with the product was high among design teams. The minor challenges that were mentioned included the need to compile data and the timeline for submitting their designs, as shown in the two quotes below.

> *The modeler helps with having all the data and not having to scramble at the end… but the least helpful aspect of the program is having to compile all the data.*

[8] A bleeding edge technology is a category of technologies that is so new that it is associated with high risk for the lead adopters.

The hardest part is having to wait until a certain phase of modeling is completed before submitting our part of the architecture. Just let us submit, and then send us a check.

3.5.2.2 Energy Modelers

Modelers' barriers to participation in the product centered around the use of the OpenStudio software (n = 3) and the Terms and Conditions associated with the product approval process (n = 2). Several energy modelers noted that OpenStudio is not typically used by their teams, and they only use it for projects that participate in the Xcel Energy New Construction Product. These energy modelers note that, because of this, when they are required to use OpenStudio (i.e., when they want to participate in the product) they end up being slightly higher priced and can sometimes lose bids. Modelers also noted that it is hard to get training in OpenStudio because the classes are often full. The quotes below provide additional detail on this software barrier.

Since [OpenStudio] isn't the product we use for our team, we end up being slightly higher priced and lose bids. I have tried to get training, but it is always filled up.

[…] Certainly the EDAPT portal and use of OpenStudio for the energy modeling has its challenges for our modelers.

Some modelers noted that there can be legal issues with the Terms and Conditions associated with the product approval process, and with EDA participation specifically. One modeler said that it has really slowed down their process and led them to funnel projects away from EDA and toward EEB. Another noted that developers, particularly those unfamiliar with the product, often have issues with the Terms and Conditions. The two quotes below provide additional detail on these challenges.

I'm not sure exactly what the legal concern is with the way the current Terms and Conditions are written, but... the legal counsel for the city of Denver perceives that, to move forward with EDA, even to sign that Terms and Conditions actually requires approval by the mayor. So, it becomes something that is stymied in their process.

The Terms and Conditions. You send it to a developer, and they always have an issue with it.

3.5.3 Nonparticipating Trade Partner Decision-Making & Barriers

The evaluation team asked nonparticipating trade partners about their own barriers and considerations around recommending energy-efficient equipment and participating in the product, as well as their perception of their customer's barriers and motivations to installing energy-efficient equipment and systems. The biggest barrier to trade partner product participation was a lack of awareness and knowledge of the product. Trade partners perceived the biggest barrier to installing energy-efficient equipment or systems for their customers was upfront cost. Conversely, the biggest perceived motivator for installing energy-efficient equipment or systems was saving money, followed by environmental and sustainability

considerations. Updated energy codes did not appear to have a large impact on new construction for nonparticipating trade partners.

3.5.3.1 Nonparticipating Trade Partner Barriers & Considerations

Nonparticipating trade partners' biggest barrier to participation in the product was a lack of knowledge and awareness of the product (n = 8). Two of the eight interviewees who identified a lack of knowledge and awareness as a barrier to product participation had participated in the product previously. Though these interviewees had participated before, and they had a positive experience, they felt as though they still did not fully understand the product. This suggests that additional education and outreach may be beneficial for previous, infrequent participants. Those that had discussed an awareness barrier (n = 8) expressed a desire to learn more and become involved in the product, as demonstrated in the quotes below:

> *We don't have anything against it. We just haven't been aware of it.*

> *I think the biggest thing would be for Xcel to[…]do a better job of letting the designers know what type of rebates are out there, because a lot of the times, unless we asked, we don't know what Xcel is doing or offering.*

A variety of factors influenced nonparticipating trade partners' decisions to recommend energy-efficient equipment and systems to their clients. The most common considerations were environmental or sustainability focused (n = 5), followed by reducing costs for their clients (n = 4), and operational considerations (n = 3).

3.5.3.2 Nonparticipating Trade Partner Perceptions of Customer Barriers & Motivations

The evaluation team asked nonparticipating trade partners about their perceptions of their customers' barriers and motivations to installing energy-efficient equipment and systems. The most commonly cited client motivations to installing energy-efficient equipment and systems included lower energy bills and long-term cost savings (n = 9), environmental considerations (n = 6), incentives (n = 4), and pursuing LEED certification (n = 4). For some (n = 3), the marketability of an energy-efficient or "green" building was an important motivation. This group included both long-term building owners and those without a long-term stake in the building (e.g., developers), as shown in the below quote.

> *If it's a developer that's trying to sell the property, they're generally doing it [installing energy-efficient equipment and systems] because of market pressure … they have a client base that has an awareness of energy efficiency and wanting to do the right thing for climate change … so they want to include energy efficiencies in their design or have a LEED-certified building that they can tell their prospective buyers that this is an energy-efficient building.*

The evaluation team also asked nonparticipating trade partners about their clients' barriers to installing energy-efficient equipment and systems. All interviewees (n = 10) mentioned upfront costs as a barrier to installing energy-efficient equipment and systems. When discussing upfront

costs, interviewees often mentioned that, even though clients weigh other considerations, upfront costs always take priority, as demonstrated in the quotes below.

> *Unfortunately, it all comes down to the mighty dollar, unless it's a corporation that's said they're going to build LEED buildings, and that's just the way it is, whatever it costs it costs.*

> *Upfront cost is usually high on the agenda and then lifecycle cost will follow shortly thereafter. There are times we could even demonstrate that eventually it will pay for itself, but they need to save the money now for whatever reason.*

Split incentives were another commonly cited barrier (n = 6). Interviewees noted that their clients who plan on selling or renting the building would rather save money on construction costs than focus on payback or return on investment. The following two quotes demonstrate this barrier:

> *A lot of the developer clients that we have are looking at the bottom line, because they're going to sell the building in a five years, or two or three. But if you have a client that has a long hold, doing things more efficient upfront [and] spending a little more money makes sense to them because, if they can put in equipment that is more efficient, then they make more money over the long haul. So it depends on the client.*

> *We try to steer them in the path of the best longevity for the building... you know, the long-term process, as opposed to short-term cost savings. Its just a matter of if their timeframes align with that. If they're long-term clients or owners, that works; if they're short-term, they don't care.*

Half of nonparticipating trade partner interviewees (n = 5) discussed challenges in the current construction market, including supply chain issues and the increasingly expensive cost of construction. Some nonparticipating trade partners felt that the current market challenges were related to the COVID-19 pandemic. Others did not connect the increased cost of construction to the COVID-19 pandemic. The following quotes discuss these issues.

> *It's sort of tough now because of the whole supply chain thing; it's like what can we get faster, and you're not really discussing the energy efficiency part of it. It's like, what rooftop units can we get in eight weeks? So it's sort of changed a little bit in this market.*

> *The challenge, it's always just cost… and in today's market, it's tough… prices are driven up. It has to do with availability [and is] not necessarily COVID; it's just today's market.*

The evaluation team asked nonparticipating trade partners about the impacts of changing energy codes on the new construction market and the energy efficiency recommendations they make. Half of all interviewees (n = 5) said that updated energy codes do not have much of an impact on new construction. The other half (n = 5) mentioned a few minor barriers including client pushback (n = 1), scheduling impacts as they wait for energy-efficient equipment to

become available (n = 1), higher costs for clients (n = 2), and a rush to get projects done under old codes (n = 1). However, no interviewees reported that these changes had a large impact on their work.

Two interviewees mentioned that, under updated energy codes, their building designs are closer to code minimum than they were previously. This suggests that previously, these trade partners were making energy-efficient design recommendations that resulted in a design well above code without the influence of the product, but that they have not continued to improve the energy performance of their design as code requirements increased. There may be interest and opportunity for Xcel Energy to work with these design teams to further improve their typical design. The quote below explains this idea further:

> *As the baseline gets higher, more often than not, I feel like what we are providing or doing is closer to what that minimum is. I would think, for a long time, we've probably been in compliance with the 2015 code, and that was well above code requirement in 2006, 2009, 2012, and now that's just base requirement.*

3.6 Electrification

Xcel Energy expressed interest in identifying where participating customers and trade partners are in their own energy transformation journey in order to gauge understanding of and alignment with jurisdictional climate and energy goals, including electrification. To meet this objective, the evaluation team asked participating customers and both participating and nonparticipating trade partners about their awareness and perceptions of electrification, and interest in electrification technologies. Overall, familiarity with electrification varied, and all three groups expressed a variety of hesitations and levels of excitement surrounding it. We also found consistent interest in renewables and new technology among participating customers.

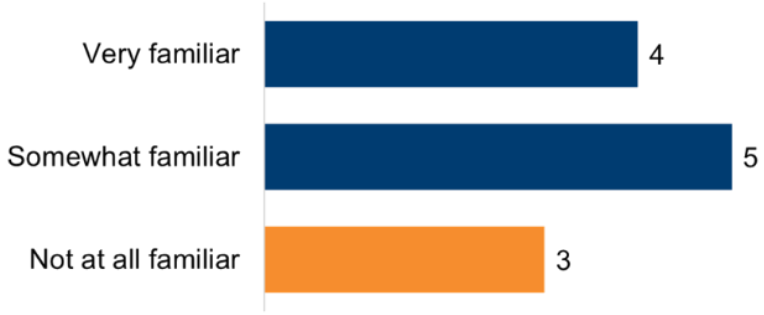
3.6.1 Electrification Awareness & Perceptions

The evaluation team asked both participating customers and participating trade partners about their awareness and perceptions of electrification. Participating customers were somewhat to very familiar with electrification. However, some provided definitions of electrification that suggest some misunderstanding. Participating customers also expressed interest in a variety of electrification technologies. Participating trade partners noted that they receive very little pushback from their clients related to electrification, while nonparticipating trade partners had a variety of hesitations about electrification. The following sections discuss our findings for each group.

3.6.1.1 Participating Customer Electrification Awareness & Perceptions

Participating customers were typically somewhat or very familiar with electrification (n = 9), as shown in Figure 3-8 below.

Figure 3-8. Participating Customer Electrification Awareness



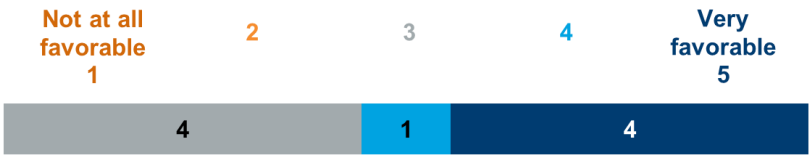
The evaluation team asked participating customers who were somewhat or very familiar with electrification what the term meant to them. Six respondents provided responses that included words such as “fossil fuels,” “gas,” or “alternative energy.” These were often used in the context of shifting from fossil fuels and gas towards electricity. The quote below is one such response:

> *[Electrification] means shifting of buildings operations from using fossil fuel, such as natural gas, to primarily using electricity for things like heating, cooling, water heating, and cooking.*

The remaining three respondents said that electrification meant providing power, suggesting that there may be some misunderstanding of the term.

The evaluation team also asked those respondents who were aware of electrification to rate their overall opinion of electrification on a scale of 1 to 5, where 1 is “not at all favorable” and 5 is “very favorable.” No respondent gave electrification an unfavorable rating, as shown in Figure 3-9 below.

Figure 3-9. Participating Customer Electrification Perceptions



The participating customers who had a favorable opinion of electrification talked about the benefits of electricity, or the environmental cost of fossil fuels, as shown in the quote below:

> *Because I think we should use less fossil fuels for the environment.*

Those with neutral opinions of electrification discussed the complex and challenging steps to becoming an all-electric society, as shown in the following quote:

> *While I think there are advantages of electrification, there are major technical challenges to making it feasible. To put everything in our society over to electrification poses challenges to transmission lines, distribution lines, utility services at the location of the business or home. Just the idea of exchanging cars to all electric vehicles is a major hurdle in a residential area. It's difficult and high cost.*

The utility-specific concerns customers mentioned suggest that there is a role for Xcel Energy and other utilities in educating customers about electrification, including technologies or programs that enable electrification through grid flexibility and alleviating technological or capacity concerns.

3.6.1.2 Participating Trade Partner Electrification Awareness & Perceptions

The evaluation team found that participating trade partners are aware of the shift towards electrification and receive little push-back from clients on increasing electrification, as shown in the following quote:

> *Our clients have considered [all-electric buildings] and would like to do that and are evaluating the marketplace to see whether that's realistic for what they're trying to do.* Our clients are eager to come on board with that.

Trade partners have adapted to this shift by pushing for electrification in designs, though some design teams are concerned about the future impact of electrification on the grid. The following two quotes from trade partners discuss these challenges:

> *The hot topic right now is building electrification; that's what everybody is asking about. We're right on the cusp, I think, of fully switching over. Every single one of my projects is asking the question and evaluating it.*

> *It's nice to see that we have multiple fuel options, but how are we generating that power? Are we actually saving resources? The amount of power required to meet the power requirements needs to be factored in.*

As with customers, trade partner utility-specific responses suggest that there is a role for Xcel Energy to educate trade partners on how Xcel Energy is addressing capacity and generation concerns.

3.6.1.3 Nonparticipating Trade Partner Electrification Awareness & Perceptions

The evaluation team also asked nonparticipating trade partners about their awareness and perceptions of electrification. All but one nonparticipating trade partner interviewee (n = 9) believed that a shift towards electrification was coming. However, most interviewees (n = 7) had a variety of hesitations around this shift toward electrification. Only three interviewees were excited about electrification and did not discuss any concerns. Commonly discussed concerns among other interviewees included the price of electricity and the relatively lower cost of gas (n = 7). Most nonparticipating trade partners (n = 7) did not see electrification as a fully viable

option due to the low cost of heating homes using natural gas. One interviewee even reported that they had seen a shift *towards* natural gas, not away from it. These findings suggest that there are strong hesitations among nonparticipating trade partners around building electrification due to the cost of electricity. These sentiments are demonstrated in the quotes below.

> *I think that as long as electric prices per unit are more expensive than gas, I don't think [electrification] will occur.*
>
> *It's gonna take a big paradigm shift for people to gravitate towards non-gas heat because its ingrained in our culture that gas heat is the cheapest, and it is.*

3.6.2 Interest in Renewables & New Technology

The evaluation team also asked participating customers about their interest in electrification technologies and practices. Most of the respondents had some interest in at least one new technology, and three had already installed electric vehicle chargers. Demand response controls had the least interest among the respondents. However, as shown in Figure 3-10 below, still half of respondents were interested in demand response controls. This interest in electrification technologies provides additional evidence that customers have favorable opinions of electrification and are open to including electrification technologies in new building designs.

Figure 3-10. Participating Customer Interest in Electrification Technologies

3.6.3 Opportunities for Cross-Product Participation

The evaluation team also asked participating customers if they had interest in opportunities for the New Construction Product to work with other Xcel Energy products and, if so, which products. Respondents were equally interested in renewables products, electric vehicle products, and other energy efficiency products (n = 11). One participant was not sure about any of the products. When asked about equipment or systems that were considered but not installed, two respondents also said that solar was an option they considered installing in their building, but did not due to cost and space requirements. This provides additional evidence of interest in renewables.

4 Conclusions & Recommendations

This chapter presents the evaluation team's key findings and associated recommendations regarding the Xcel Energy New Construction Product in Colorado. All recommendations are based on key findings from our 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 the New Construction Product operated well, and both participating customers and trade partners were satisfied with the product. We also found that the product continued to have a strong influence on the new construction market in Colorado. We identified a number of recommendations to improve on the existing high satisfaction scores and sustain product influence. The remainder of this section presents key findings and recommendations.

- **Key Finding 1: The New Construction Product remains influential in encouraging customers to include energy-efficient equipment and systems in new construction projects in Colorado**. The evaluation team estimated a retrospective NTGR of 0.86. Major drivers of free-ridership include environmental factors and standard practice. We factored in a market effects adjustment of 0.03 due to the product's influence on the industry broadly and evidence that suggests the product helps reduce value engineering and that design teams rely on the support they receive from energy modelers to evaluate and include energy-efficient equipment and systems in new building design.
  - **Recommendation 1: The evaluation team recommends using a prospective NTGR of 0.86 if program design and implementation remains the same.** The program design of working with pre-approved, independent energy consultants to implement the EDA product is achieving product objectives and influencing design team decision-making. However, the evaluation team anticipates that energy codes will continue to drive energy efficiency, and that energy efficiency will continue to be embedded in customer goals in future years. Therefore, these factors will continue to influence customer decision-making and will continue to be drivers of free-ridership.
- **Key Finding 2: Participants and participating trade partners were largely satisfied with the product and found product participation easy.** However, some participants found contacting Xcel Energy somewhat difficult, suggesting a need for internal coordination and a clarification of communication channels. Customers interact with multiple groups at Xcel Energy when participating in the product, including product staff and strategic account representatives. Clarification of when, how, and with whom to communicate might improve and streamline customer experience with the product. Additionally, one EEB participant found selecting energy-efficient equipment somewhat difficult, suggesting some clarification of processes may be needed.
  - **Recommendation 2a: Strengthen relationships between product staff and strategic account representatives.** Customer responses suggest that additional coordination among product staff and strategic account representatives is needed to provide a more seamless experience. This increased coordination could help to clarify communication channels internally, as well as for customers. Product team interactions with strategic account representatives could also be used to ensure

understanding of the product and its processes among strategic account representatives.

- **Recommendation 2b: Work more closely with EEB implementors to understand barriers to selecting energy-efficient equipment and provide clarifications as needed.** Although just one customer had difficulty with selecting energy-efficient equipment, it suggests that improvements can be made to product processes to support customers to more easily participate in the product and include more energy-efficient measures in the new building design. The product should work closely with product implementers to understand where difficulties may lie and clarify processes as needed.

- **Key Finding 3: Modelers reported that there were challenges with the EDAPT portal and the OpenStudio software.** Several modelers noted that OpenStudio is not their standard energy modeling software, and that OpenStudio trainings are limited. NREL will stop hosting EDAPT in October 2022, however a third-party is in the process of taking over this service. One interviewed utility also uses EDAPT/OpenStudio but is in the process of changing their model, due in part to earlier questions as to whether a third-party would host EDAPT and similar trade partner challenges with OpenStudio. Three of the five peer utilities allow modelers to use multiple software. One utility implementer does all their modeling in proprietary software.

  - **Recommendation 3a: Consider opportunities that allow energy modelers to use multiple energy modeling software.** This could include considering moving away from EDAPT and allowing modelers to choose from a pre-approved list of modeling software. Xcel Energy should assess savings assumptions in modeling software tools when selecting an alternative if this option is pursued. This could also include identifying or developing software to convert outputs associated with other energy modeling software to XML, the output produced by OpenStudio that is uploaded into EDAPT.

  - **Recommendation 3b: If OpenStudio remains the primary modeling tool, offer training on OpenStudio to participating energy modelers.** Offering these trainings could help to increase modeler familiarity and comfort with OpenStudio, and provide an opportunity for Xcel Energy to outline the benefits of using OpenStudio in conjunction with EDAPT.

- **Key Finding 4: Surveyed participants have a favorable opinion of electrification and interest in electrification technologies.** However, three customers who said that they were familiar with electrification offered definitions that indicate some confusion. Participating trade partners noted that they receive little pushback from clients on electrification. However, there was some design team hesitation related to grid impacts. Taken together, this interest but hesitation suggests there is opportunity for Xcel Energy to improve understanding of electrification. Most nonparticipating trade partners expressed hesitations about a shift toward electrification, including the price of electricity and the relatively lower cost of gas for heating (n=7).

  - **Recommendation 4a: Coordinate among product staff, account representatives, sales teams, and other relevant Xcel Energy staff to define opportunities to educate customers about electrification building practices and opportunities.** Various groups within Xcel Energy have an interest in improving customer awareness and understanding of electrification. Product staff should

coordinate with these groups to ensure that the process is consistent, straightforward, and seamless for customers.

- **Recommendation 4b: Offer training on electrification technologies and practices for design teams.** The product is already offering training to building professionals as part of the Codes and Standards Compliance component that began in 2021. Product staff should consider including training on electrification technologies and practices for design teams to help address hesitation. Additionally, training may improve connections between Xcel Energy and design teams not reached through the product currently.
- **Recommendation 4c: Align New Construction offering with utility-wide discussions around carbon-free goals to make the operating cost of electric heating more feasible to customers.** Continue conversations surrounding electric rates to make them more friendly to customers during heating periods of the year, compared to gas rates.

- **Key Finding 5: Nonparticipating trade partners were largely unaware of the New Construction Product.** Five nonparticipating trade partners were unaware of the product, including two who were surprised the product had not been brought to their attention by the engineers and energy modelers with whom they work. Nine of the ten interviewed nonparticipating trade partners were interested in learning more about the product and indicated a preference for direct outreach including lunch and learns (n=3), virtual or in-person informational sessions (n=3) and continuing education credits (n=3) with organizations such as AIA.
  - **Recommendation 5: Explore additional channels to identify and engage with customers and trade partners.** This could include direct outreach to top design firms, developers, and construction firms in Colorado who are not currently engaged in the New Construction Product. Additionally, peer utility programs look to construction aggregation service subscriptions (e.g., Dodge Data & Analytics construction project leads, ConstructConnect Insight), economic development newsletters in key markets (e.g., Economic Development Council of Colorado), and trade groups or industry organizations (ASHRAE, AIA, U.S. Green Building Council) to identify potential program participants. These additional outreach channels might help product staff identify potential product participants missed by current outreach strategies.

Appendix A:Evaluation Plan

A.1 Introduction

To support the 2021 process and impact evaluation of Xcel Energy efficiency products, the TRC evaluation team conducted a process and impact evaluation of the Xcel Energy Colorado New Construction product. This memo provides the plan for the 2021 Colorado New Construction product evaluation based on staff feedback during the evaluation kick-off meeting, staff interview findings, and review of program documentation. This evaluation plan includes the following sections:

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

A.2 Product Overview

The Colorado New Construction product helps commercial and industrial customers include energy efficient systems and equipment in the design of their new construction or major renovation projects. The New Construction product currently includes two primary components[1]:

- **Energy Efficient Buildings (EEB)** is designed for smaller buildings or those buildings with simple systems that do not require full-scale energy modeling, have tighter budgets, and/or are engaged later in the design process (typically after the schematic design phase). EEB offers prescriptive incentives for a comprehensive list of typical energy efficiency measures including heating, cooling, lighting, refrigeration, building envelope, and electric motors as well as custom incentives for other custom opportunities. Xcel Energy contracts with Nexant to implement this component.
- **Energy Design Assistance (EDA)** is more comprehensive as it engages participating customers early in the design process and uses integrated design modeling. To implement this component, Xcel Energy works with pre-approved, independent energy consultants. This component targets larger buildings, offering three tracks:
  - **EDA Basic:** This track provides energy expertise during the design phase of new construction or major renovation projects, collaborating with customers to identify energy savings opportunities.
  - **EDA Enhanced:** This track is for customers interested in obtaining a sustainable building certification (e.g., Leadership in Energy and Environmental Design (LEED)) and earlier analysis in daylighting, lighting, mechanical system comparison and building orientation.

[1] In September 2019, the product began offering a third component, New Construction Lighting. This is similar to other prescriptive products in that customers may apply for rebates by submitting a lighting ComCheck and providing a detailed invoice of installed equipment. This component was a small part of the product in 2020 and is not a focus of the evaluation.

- **EDA Express:** This track typically serves customers whose projects are a more common type. This track draws from previously modeled buildings, which results in lesser administrative requirements for the builder.

Current incentives and eligibility requirements for each track are shown in Table 1 below.

Table 1: Colorado New Construction Incentive Levels and Eligibility Requirements

Eligibility Requirements	EEB	EDA Basic	EDA Enhanced	EDA Express
Incentive	Custom and prescriptive per measure	$250/kW, $0.021 to $0.084/kWh (depending on time of use (TOU)), $4/Dth2	$250/kW, $0.021 to $0.084/kWh (depending on TOU), $4/Dth2	$250/kW, $0.021 to $0.084/kWh (depending on TOU), $4/Dth2
Square footage	>10,0001	>50,000	>50,000	>50,000
Application timing	Prior to equipment bidding stage	Schematic design or early design development	Pre-design or early schematic design	Schematic design or early design development
Savings commitment	N/A	15% peak coincident demand savings; 15% natural gas savings	30% peak coincident demand savings; 15% natural gas savings	15% peak coincident demand savings; 15% natural gas savings
Proof of registration	N/A	N/A	3rd party verified green building certification	N/A

[1] EEB projects are generally less than 70,000 sqft, however there is no building size upper limit for participation.
[2] Xcel Energy offers a design team incentive for participating EDA projects, ranging from $8,000 to $12,000 per project.

As shown in Table 2, the product achieved 18,928 kW, 62,467,232 kWh, and 138,488 Dth savings in 2020, with the majority of savings derived from the EDA tracks.

Table 2: Colorado New Construction Energy Savings, January 2020 – December 2020

	kW	kWh	Projects	Dth
EDA	17,309	54,852,622	86	122,779
EEB	1,241	5,604,154	45	15,709
New Construction Lighting	377	2,010,456	49	-
Total	18,928	62,467,232	138,488	180

Note: This is the population of participating customers receiving rebates between January 2020 and December 2020. These numbers are based on data provided by the product manager in April 2021.

For the 2019/2020 product cycle, Xcel Energy adjusted the incentive structure for the EDA component, reducing the incentive for peak coincident demand to $250/kW down from $400/kW, and adjusting kWh rebates to reflect TOU rates. EDA is also increasingly prioritizing technologies and strategies that mitigate peak loads.

Additionally, Xcel Energy has made changes to the New Construction product for 2021. In 2021, the New Construction product will include an additional component, Codes and Standards Compliance. As part of this component, Xcel Energy will proactively encourage and support jurisdictions to adopt the latest building energy codes, as well as provide resources to support improved code compliance.

As seen in Table 2, the majority of the New Construction savings is derived from EDA, followed by EEB with a small portion derived from New Construction Lighting. As such, the evaluation focused on the EDA and EEB components and did not include the New Construction Lighting component.

A.3 Evaluation Overview

The 2021 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 (NTG) ratio. This section presents the objectives of the two components of the evaluation. It is followed by a more detailed description of the evaluation activities.

Process Evaluation

The evaluation team discussed process evaluation priorities during the kickoff meeting[2] and staff interviews.[3] During those conversations, several process-related themes emerged.

- **Customer motivations and experiences:** Overall, customer feedback about the product has been very positive, and the product has had success in recent years in terms of cost-effectiveness, net benefits, and energy savings. To help build upon this success, the product team would like to better understand customers' experiences and motivations related to their product participation, including how the product provides value to them, and why they choose to participate.
- **Potential for product improvements:** The product has had success in recent years in re-aligning incentives to focus on peak demand and TOU. However, product staff highlighted the importance of continuing to promote a shift towards savings that have the highest value for the overall system, and controllability of new building loads, to support Xcel Energy's overall corporate goals. To achieve this, product staff are interested in exploring the natural break points across components or market segments that may guide Xcel Energy, implementers and modelers toward more impactful energy savings practices. Additionally, product staff indicated an interest in supporting jurisdictions in their energy goals, including electrification and energy code compliance and adoption, and are interested in exploring potential product changes required to facilitate this support.
- **Impact of increasingly stringent codes:** The adoption of more stringent energy codes and increasing baselines presents a challenge for customers to meet product eligibility requirements. This makes it difficult for product staff to communicate the benefits of building above code, especially given cost-effectiveness concerns. Therefore, this evaluation will investigate how best to equip product staff with the tools and knowledge to continue to drive change among Colorado builders.

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

- Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.
- Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.
- Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.
- Identify where members of the building community (e.g. customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g. electrification, electric vehicle (EV) and infrastructure readiness).

[2] The kickoff meeting was held in February 2021.
[3] Staff interviews took place in February and March 2021.

- Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.
- Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.
    - This could include identifying possible strategies to more effectively screen and enroll projects into EEB and EDA tracks, shifts in the design that promote savings that have the highest value to the overall system, or those that advance more impactful building practices among Colorado builders.

Impact Evaluation

The objective of the impact evaluation of the Colorado New Construction product was to develop a net-to-gross (NTG) ratio documenting the extent to which product activities influenced customer purchasing decisions. The evaluation team used participating customer self-report surveys, nonparticipating customer self-report surveys, and trade partner interviews to estimate the Colorado New Construction product NTG (both retrospective and prospective). Accordingly, the **objectives of the impact evaluation** included:

- Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components).
- Identify major drivers of free ridership.
- Assess participating and nonparticipating customer spillover.
- Assess market effects of the Colorado New Construction product.

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

A.4 Data Collection Activities and Sampling Plans

To meet the above objectives, we conducted a variety of data collection activities. These are listed in Table 3and explored more in this section. The evaluation team also conducted interviews with Xcel Energy staff members (Table 3, Task Reference 1) to help understand specific needs for this evaluation.

For customer research, the evaluation team conducted phone surveys with participating customers (Table 3, Task Reference 2). These surveys informed prospective and retrospective NTG estimates, as well as customer-related process questions. The evaluation team completed interviews with 12 participating customers; the interviews will follow up with participating customers who provide conflicting information during the survey research (Table 3, Task Reference 2b). The evaluation team conducted interviews with non- participating customers, defined as those customers that have no record of having completed a project through the New Construction product in Xcel Energy's Salesforce system, but who have completed a new construction or major renovation project meeting product eligibility requirements. (Table 3, Task Reference 3).

For trade partner research, the evaluation team conducted phone interviews with design team professionals and participating energy modelers (Table 3, Task Reference 4) to understand how

these design professionals participate in and are influenced by Xcel Energy's Colorado New Construction product.

Finally, peer utility benchmarking interviews (Table 3, Task Reference 5) helped Xcel Energy understand how other organizations are supporting energy efficient new construction.

Table 3: Colorado New Construction Product Research Summary

Task Ref.	Research Task	Included in Original Scope?	Sample Size	Research Objectives
1	Staff Interviews	✓	5	Inform evaluation plan
2	Participating Customer Surveys (phone)	✓	45	Product experiences, NTG
2b	Participating Customer Interviews	✓	10	Clarify conflicting NTG survey responses
3	Nonparticipating Customer Interviews	✓	10	Barriers to participation, NTG
4	Trade Partner Interviews	✓	20	Product experiences, NTG
5	Peer Utility Benchmarking Interviews	✓	4-6 utilities	Program design, jurisdictional goals

1. Staff Interviews

In February and March 2021, the evaluation team conducted five interviews with Xcel Energy staff to inform this evaluation plan, discuss product goals, and review product processes, challenges, and successes. Those interviewed included the product manager, two members of the engineering team, a team lead, and an Xcel Energy account manager. These interviews were conducted over the telephone and took between 30 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. Participating Customer Surveys

The evaluation team utilized participating customer telephone surveys to meet both process and impact objectives. These surveys focused on the following topics:

- **Product Experience/Satisfaction:** The evaluation team discussed customer motivations to participate in the product to better understand if any particular product elements drive motivation. The evaluation team also asked about participating customers' experience with and satisfaction with various aspects of the product.

- **Retrospective NTG Impacts:** The team asked participating customers questions on product attribution, meaning the impact the product had on their decision to implement energy efficiency measures. In addition, the evaluation team included questions to understand the impact of the product's incentives on preserving energy efficient measure installations during the value engineering stage of building design. This information was qualitative in nature and considered as part of the market effects adjustment on a case by case basis, along with other evidence.

For the participating customer survey, the evaluation team surveyed customers who participated in the New Construction product in 2020. To meet the goal of 45 target completes, the evaluation team included projects with close dates in Q1 of 2021 if the response rate for 2020 projects is too low. The evaluation team attempted to survey a representative mix of EDA and EEB component participating customers, as well as a representative mix of participating customers based on market sector for the EDA component (see Table 4).

Table 4: Stratification of Sample for Participating customer Survey, January - December 2020

Strata	Population Size	Sample Size
EDA	86	30
Multifamily	53	18
Office	13	5
Hospitality	5	2
Other	15	5
EEB	45	15
Overall	**131**	**45**

2b. Participating Customer Interviews

The evaluation team recommends selecting up to 10 customers from the participating customer surveys and conducting in-depth interviews with these customers. These interviews will be reserved for survey respondents who had conflicting responses on NTG questions so that the evaluation team can dive deeper into their decision-making processes and clarify their free-ridership and/or spillover.

3. Nonparticipating Customer Interviews

The evaluation team conducted 10 nonparticipating customer interviews to meet impact and process objectives. For the purposes of this research, nonparticipating customers are defined as customers who have no record of having completed a project through the New Construction product in Xcel Energy's Salesforce system, but who have completed a new construction or major renovation project meeting product eligibility requirements. The evaluation team

attempted to identify organizations who have completed a new construction project through a variety of sources, including permit offices, industry associations (e.g., the Rocky Mountain Chapter of the Associated Builders and Contractors), trade partner interviews, and Xcel Energy data on new building connections. The evaluation team conducted these interviews after the trade partner interviews to allow for trade partner identification of nonparticipating customers. These surveys were conducted over the phone and focused on the following two topics:

- **Barriers to participation:** The evaluation team assessed nonparticipating customer perceptions and awareness of the product, including their awareness of efficient technologies, to better understand customer priorities within the Colorado market. The team also investigated barriers to product participation and to pursuing efficient building designs and/or the installation of prescriptive measures.
- **Retrospective NTG Impacts:** The team asked nonparticipating customers if they installed energy efficient equipment due to any influence from Xcel Energy outside of the product participation process. This information supported potential spill over results among nonparticipating customers.

4. Trade Partner Interviews

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

- **Product Experience/Satisfaction:** The evaluation team discussed the design team professionals' experiences and satisfaction with the product, including motivations to participate.
- **Retrospective and Prospective NTG Impacts:** Finally, the team asked questions on product attribution, or the impact the product had on their decision to recommend their customers participate in the Xcel New Construction Product. In addition, the evaluation team included questions to understand the impact of the product's incentives on preserving energy efficient measure installations during the value engineering stage of building design. This information was qualitative in nature and considered as part of the market effects adjustment on a case by case basis, along with other evidence.

The evaluation team planned to interview 16 design team professionals as part of this effort, as well as 4 energy modelers. However, adjustments to this split may be necessary to complete the target 20 interviews. The evaluation team attempted to conduct these interviews after the participating customer surveys so that we could follow-up with trade partners that customers identified as being particularly influential to a customer's decision-making process.

5. Peer Utility Benchmarking Interviews

The objective of the peer utility benchmarking task was to understand how peer utilities are approaching key issues related to implementing C&I new construction programs. The evaluation team collaborated with the product manager to identify 4-6 peer utilities to interview. The team 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 the geography, the number of customers, and/or the number of new C&I construction starts in its territory), and utilities that include code compliance and

adoption support activities as a component of their New Construction program, or as a separate stand-alone program.

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

- **Program Design:** There was interest among product staff and the evaluation team in understanding how other utilities account for increasingly stringent code adoption and rising baselines within their C&I new construction programs. Additionally, the team investigated strategies used by other utilities to better align incentives to focus on peak demand or TOU.
  - Additionally, the evaluation team targeted utilities that use similar product and data tracking tools to implement the program, including Austin Energy which also utilizes the Energy Design Assitance Program Tracker (EDAPT).
- **Electrification and/or Other Jurisdictional Goals:** The evaluation team investigated what, if anything, other utilities have done to support jurisdictions in their goals related to electrification and EV readiness. The team prioritized dual-fuel utilities for this objective.

The evaluation team identified the following peer utilities to include in the peer utility sample, following discussions with the product manager (shown below in order of priority). The evaluation team reviewed these utilities and identified additional peer utilities for consideration prior to conducting the interviews:

- Arizona Public Service
- NV Energy
- National Grid Massachusetts
- Consumers Energy
- Austin Energy
- Potomac Edison
- MidAmerican Illinois

The evaluation team developed a peer utility interview guide that is customized to the desired benchmarking components, that was provided to Xcel Energy for approval prior to beginning any data collection. Finally, the evaluation team summarized the results of the benchmarking analysis in a summary within the final evaluation report.

A.5 Net-to-Gross Approach

The NTG assessment aimed to estimate the percent of savings achieved that can be attributed to product actions, or a NTG ratio. The NTG value included multiple metrics, which are described in the sections below. To do so, the evaluation team primarily used participating

customer self-report surveys, trade partner interviews, and self-report nonparticipating customer interviews to assess product attribution, including free ridership, spillover, and market effects metrics. The 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.

The evaluation team estimated a retrospective and prospective NTG value. Using multiple sources of information, including surveys with customers and interviews with trade partners, we synthesized available data to develop the final NTG ratios to ensure that we provided the most accurate and reliable estimate of NTG. The remainder of this section presents the evaluation team's method to estimating the retrospective and prospective NTG ratios.

Retrospective NTG

The evaluation team estimated a retrospective NTG 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 synthesized these results to estimate a NTG ratio for the product. This section describes how the evaluation team estimated these components of the retrospective NTG ratios.

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 the C&I New Construction Protocol from the Illinois TRM, which follows the Core Non-Residential Free Ridership protocol with one exception; the concept of project timing and deferred free ridership is not applicable in new construction projects and as a result the deferred free ridership specifications are excluded from the calculation. The evaluation team wrote specific questions to assess two free-ridership components:

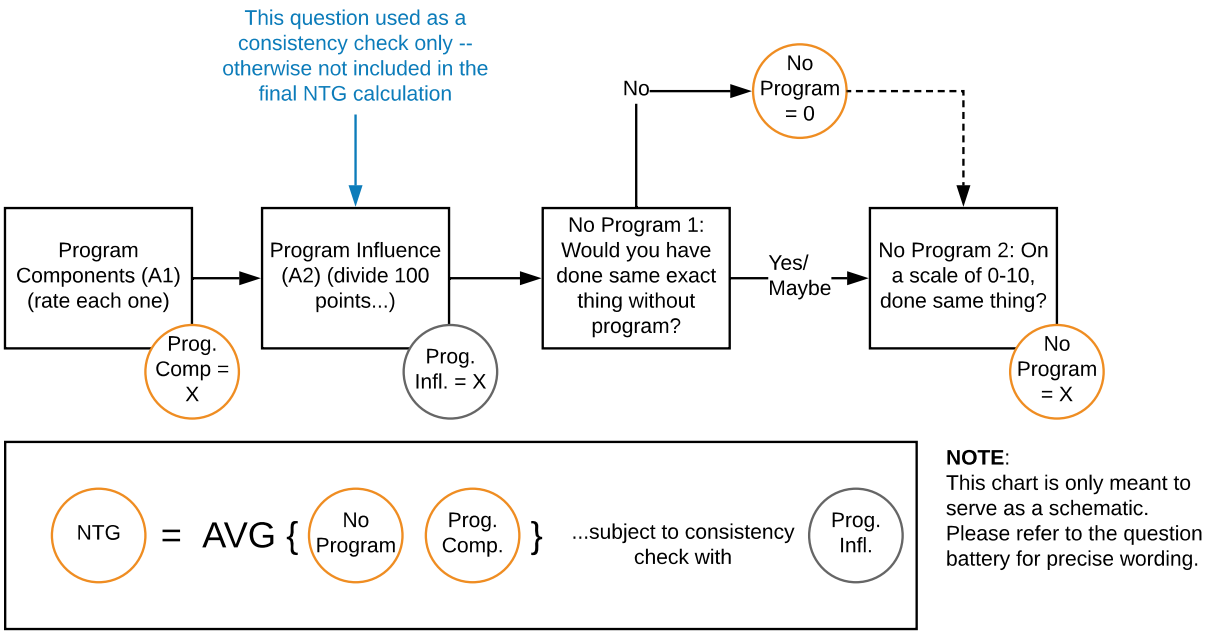
- A **Program Components Score**, based on the participating customer's rating of the importance of various factors on their decision to carry out the energy-efficient project;
- A **Program Influence Score**, based on the participating customer's perception of the importance of various product factors, relative to the importance of non-product factors in their decision to carry out the energy-efficient project. This score was used as a consistency check only, not a direct input into the NTG algorithm; and
- A **No-Program Score**, based on the participating customer's intention to carry out the energy-efficient project without product funds. The No-Program score was set to zero if

[4] Illinois Energy Efficiency Stakeholder Advisory Group. Illinois Statewide Technical Reference Manual, Version 9.0, Volume 1, Attachment A: Illinois Statewide Net-to-Gross Methodologies, Volume 4. September 25, 2020. https://www.icc.illinois.gov/downloads/public/2021%20IL-TRM%20Version%209.0%20dated%20September%2025,%202020%20Final%20(Volumes%201-4%20Compiled).pdf

the participating customer responded “no” to the binary question asking if they would have installed the exact same measures if the program had not been available.

When scored, the Program Components and Non-Program scores assess the likelihood of free-ridership on a scale of 0 to 10. These two scores are averaged together, subject to a consistency check with the Program Influence score. Figure 1 describes the logic used for calculating free ridership.

Figure 1: Free Ridership with New Construction Calculation Methodology



The evaluation team assessed free ridership primarily using participating customer self-report surveys and integrated trade partner interviews as needed.

Participant Spillover. The spillover metric represents additional savings achieved as a result of product activities, outside of rebated project savings, by product participating customers. The evaluation team incorporated two measure attribution scores; the first incorporated the influence the product had on the decision to include energy efficient systems or equipment in the project design (measure attribution score #1), and the second incorporated likely actions taken in absence of product participation (measure attribution score #2). The spillover score, as calculated below,[5] must be greater than five in order for the additional measures to qualify for spillover. When this criterion is met, the savings are added to program attributable savings.

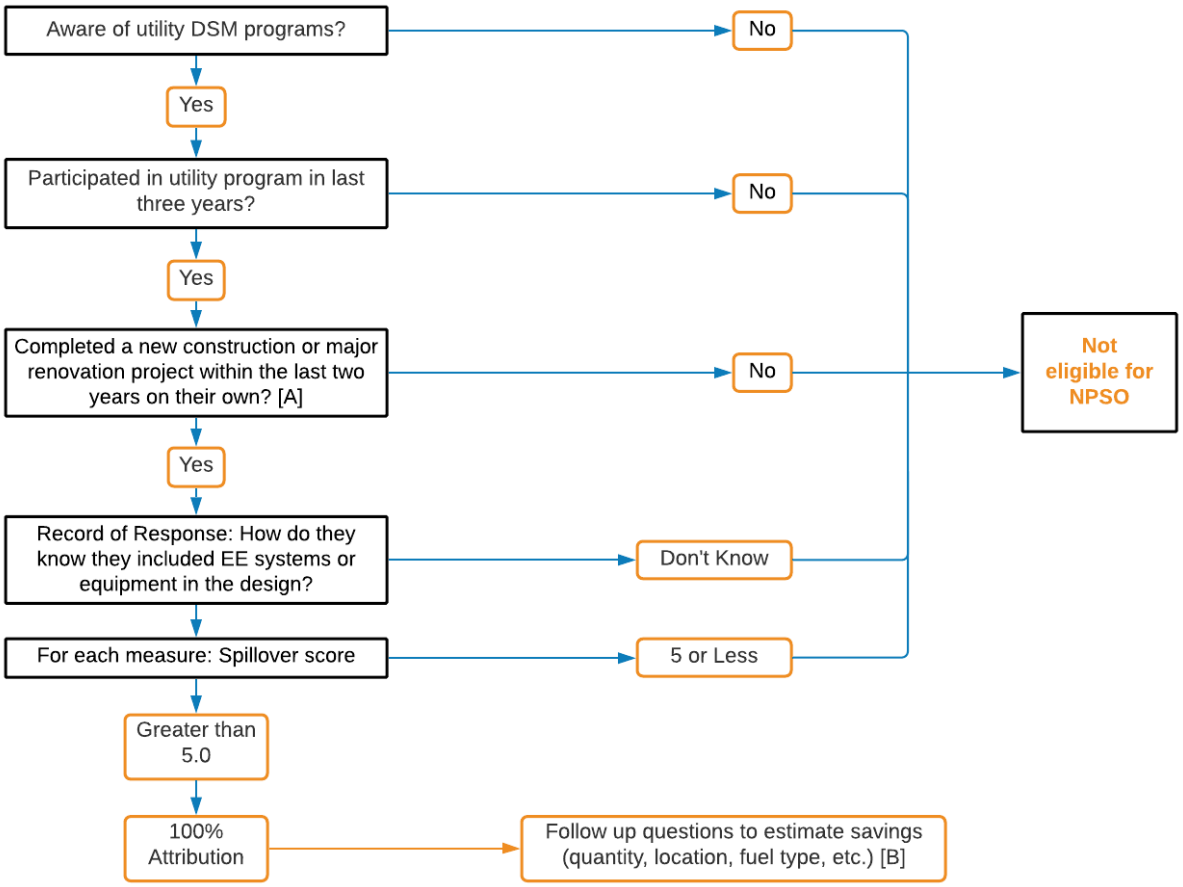
$$Spillover\ Score = \frac{Measure\ Attribution\ Score_1 + (10 - Measure\ Attribution\ Score_2)}{2}$$

Nonparticipant Spillover. The evaluation team estimated nonparticipant spillover (NPSO) by using the IL TRM "Core Nonparticipant Spillover Protocol – Measured from End Users".[6] We define nonparticipating customers as those customers who have no record of having completed a project through the New Construction product in Xcel Energy's Salesforce system, but who have completed a new construction or major renovation project meeting product eligibility requirements. The survey asked nonparticipating customers if they have completed any new construction or major renovation projects that meet product size requirements but did not participate in the New Construction product for that project.

To determine spillover-qualified equipment, the evaluation team first determined whether the customer knew about Xcel Energy's energy efficiency programs and/or marketing messages. If the customer was aware, the interview asked if their organization completed a new construction or major renovation project within the last two years and if yes, what systems or equipment were included in the design. Responses to these questions generated a list of potential spillover projects (shown at point "[A]" in Figure 1). Customers were asked how they know the systems or equipment included in the design are more efficient than other building designs. If the respondent could name an efficiency level that is above minimum code requirements, or if they identified a technology that we could confirm is above minimum code requirements, it counted towards NPSO.

[6] IL TRM Version 9, Volume 1, Attachment A, page 53-56.

Figure 2: Non-Participant Spillover Question Logic[7]



Note: We used the threshold of participation since 2011, rather than the last three years, due to the longer lifespan of cooling equipment, and given when projects began being tracked in Salesforce.

Similar to participant spillover, the evaluation team incorporated two measure attribution scores; the first incorporates the influence the utility had on the efficient building design (measure attribution score #1), and the second incorporates whether the customer would have included energy efficient systems and equipment in the building design had they not been influenced by the product (measure attribution score #2). The spillover score, as calculated below,[8] must be greater than five in order for the additional measure to qualify for spillover.

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

[7] Adapted from the IL TRM Version 9, Volume 1, Figure 4-1, page 67.

[8] IL TRM Version 9, Volume 1, page 55.

Market Effects. The trade partner interviews offerred important insights into market effects of the Colorado New Construction product. Such "market 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. Our interviews with trade partners asked if any customers installed energy efficient technologies, but did not receive an Xcel Energy rebate. The interviews also included questions to assess any long-lasting changes to trade partner practices. Market effects were considered on a case by case basis to ensure that they were not double counted.

The prospective NTG (described below) also provided valuable insights into the remaining savings potential of the residential new construction market.

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

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

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

- Participating customer surveys
- Nonparticipating customer interviews
- Trade partner interviews

Based on these results, we then may adjust the NTG to create a final recommended NTG ratio that is consistent with this narrative and is informed by the overall purpose and design of the product. The final NTG recommendation is based on the professional judgment of our team after considering all available quantitative and qualitative data.

Prospective NTG

The team will recommend a prospective NTG ratio that will be forward-looking and reflect upcoming changes to the market and known changes to the product. The NTG ratio will reflect any recommended adjustments to the retrospective NTG ratio based on evidence from the evaluation findings, including results from participating customers, nonparticipating customers, trade partners, staff interviews, and peer utilities. Trade partners will be asked about the

importance of the rebates in driving participation in the New Construction product in Colorado. In developing our final recommended NTG ratio, 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 will use input from the staff interviews to inform potential future changes to the product and incorporate those into the final NTG estimate. We may also incorporate results from the benchmarking research into prospective NTG values used in other states to inform the estimate.

Appendix B:Data Collection Documents

Appendix D contains the following:

- B.1 Staff Interview Guide
- B.2 Participant Survey Guide
- B.3 Nonparticipating Trade Partner Guide
- B.4 Trade Partner Interview Guide
- B.5 Peer Utility Interview Guide

B.1 Staff Interview Guide

Introduction

This guide was used to interview staff associated with Xcel Energy's DSM products as part of the TRC Companies 2021 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.[9] As a guide for semi-structured interviews, these questions were not necessarily asked verbatim, but served as a roadmap during the conversation.

Staff Interview Research Questions or Objectives

- Assess the extent to which the product design supports product objectives and customer service/satisfaction objectives
- Understand Xcel Energy's current CO C&I New Construction 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 CO C&I New Construction product 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

[9] Some interviews were conducted jointly if someone's role recently changed or if more than one person performs the role.

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 C&I New Construction product, what Xcel Energy hopes to achieve through implementing this product, how it operates, and a bit about your experiences with the CO C&I New Construction. We are interested in asking you some questions about the CO C&I New Construction 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 C&I New Construction product? [IF ALREADY KNOWN, REWORD TO CONFIRM]

Probes:

- 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 C&I New Construction product, both overall and specific.

B1. Can you take me through the key goals for the CO C&I New Construction product?

[For staff outside of the Customer Solutions team] Can you take me through the key goals for the CO C&I New Construction 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., upstream vs. downstream, 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 C&I New Construction product?

B4a. What are interim indicators that the CO C&I New Construction product is or is not meetings its objectives or goals?

B5. What influences, if any, do you think the CO C&I New Construction 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]

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 C&I New Construction 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 C&I New Construction product?

F3. Are there any data that you would like to collect for the CO C&I New Construction 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 interested 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.2 Participating Customer Interview Guide

Introduction

To support the process and impact evaluation of the 2020 Xcel Energy energy efficiency programs, the TRC evaluation team conducted telephone surveys with Product participants. For the purposes of this survey, the evaluation team defined a participating customer as any customer that participated In the New Construction product in 2020; if response rates were low, the evaluation team would include projects that closed in Q1 2021, followed by Q4 2019. The research was conducted to assess key process and impact evaluation objectives, including customer satisfaction, product awareness, motivations for participating, free-ridership, and spillover.

The remainder of the introduction provides the research questions which the participant survey is designed to address, a description of the sample population and the target number of completes, a description of the sample variables to support programming the survey, and fielding instructions for the survey house.

Evaluation Objectives

The process and impact objectives for the CO New Construction product evaluation were to:

- Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.
- Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.
- Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.
- Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).
- Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.
- Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.
- Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components).
- Identify major drivers of free ridership.
- Assess participating and nonparticipating customer spillover.
- Assess market effects of the Colorado New Construction product.

The participant survey does not address every evaluation objective. For reference, Table 5 provides the evaluation efforts used for each objective.

Table 5: New Construction Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Participant Survey Objective
Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews	✓
Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.	Process	Participating customer survey	✓
Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.	Process	Participating customer survey, trade partner interviews, benchmarking interviews	✓
Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews	✓

Evaluation Objective	Impact or Process Objective	Research Activity	Participant Survey Objective
Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews, benchmarking interviews	✓
Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.	Process	Trade partner interviews, benchmarking interviews	
Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components).	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Identify major drivers of free ridership.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Assess participating and nonparticipating customer spillover.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Assess market effects of the Colorado New Construction Product.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓

Specific research questions which this participant survey was designed to address are the following:

- What are customers' motivations for participating in the Product?
- What aspects of the program are easy / challenging for customers?
- How well are the Product's processes working for customers?
- How many have participated in other energy efficiency programs?

- What are customers perceptions of energy-related initiatives such as electrification and electric vehicle (EV) and infrastructure readiness?
- Would program participants install identical measures without the program availability (i.e., free-ridership)?
- Does the program influence additional energy savings outside of what is captured through the program (i.e., spillover)?

Table 6 presents the link between each evaluation objective, research question, and survey question.

Table 6: Evaluation Objective, Research Question, and Survey Question Crosswalk

Evaluation Objective	Research Question	Survey Question Number(s)
Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.	What are customers' motivations for participating in the Product?	B1, C1-C2, D1a-r
Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.	What aspects of the program are easy / challenging for customers? How well are the Product's processes working for customers?	D1a-r, Section E, Section F, Section G
Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.	How many have participated in other energy efficiency programs?	A3, A4, F5a-c
Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).	What are customers perceptions of energy-related initiatives such as electrification and electric vehicle (EV) and infrastructure readiness?	A3, A4, B2, B3, B3a, B4, G5, G6

Evaluation Objective	Research Question	Survey Question Number(s)
Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.	What aspects of the program are easy / challenging for customers?	Section E
Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components), including identifying major drivers of free-ridership and assessing market effects of the Product.	Would program participants install identical measures without the program availability (i.e., free-ridership)?	Section D
Identify major drivers of free ridership.		
Assess market effects of the Colorado New Construction Product.	Does the program influence the underlying structure and functioning of the market?	Section D
Assess participating and nonparticipating customer spillover.	Does the program influence additional energy savings outside of what is captured through the program (i.e., spillover)?	Section S

Sample Population and Target Completes

Table 7 provides the sample population based on data provided to the evaluation team in May 2021. The population was established from the unique set of respondents in the Salesforce opportunity data; the sample population is inclusive of all projects closed in 2020. The population is broken out by component (i.e., Energy Design Assistance (EDA) and Energy Efficient Buildings (EEB)). For the EDA component, participants were segmented based on market segment.

Table 7: Sample Population and Target Completes by Strata

Strata	Population	Target Completes	Response Rate for Statistically Significant Results
EDA	86	30	
Multifamily	53	18	
Office	13	5	

Strata	Population	Target Completes	Response Rate for Statistically Significant Results
Hospitality	5	2	N/A
Other	15	5	
EEB	45	15	
Overall	**131**	**45**	**34%**

Sample Variables

Table 8 includes the sample variables that were used to conduct this survey, as well as descriptions of these variables and potential codes.

Table 8: Sample Variables

Sample Variable	Variable Description	Potential Codes
INTERVIEWER_NAME	Name of interviewer from Ewald and Wasserman	e.g. Nicole Thomas
ORGANIZATION	Organization name	e.g. TRC
CONTACT	Contact at organization	e.g. Allie Hotzfeld
MONTH	Month customer completed project through program	e.g. May
YEAR	Year customer completed project through program	e.g. 2020
PROGRAM	Program name	"New Construction"
PHONE	Phone number for contact at organization	e.g. 555-555-5555
BUILDING_ADDRESS	Organization address	e.g. 123 Colorado Lane
CITY	City of organization's address	e.g. Denver
STATE	State of organization's address	e.g. Colorado
ZIPCODE	Zip code of organization's address	e.g. 12345

Survey Sections

- **Intro.** Introduction and Screening
- **A.** Firmographics, Operations, Participation
- **B.** Awareness and Electrification Perceptions
- **C.** Motivations
- **D.** Free-ridership
- **S.** Spillover
- **E:** Barriers
- **F:** Program Implementation and Processes
- **G:** Satisfaction (Programs and Components)
- **CLOSE:** Closing

Survey

[Programming Note: 77 = NA, 88 = DK, 99 = REF]

Section Intro: Introduction and Screening

Intro1. Hello, this is **<INTERVIEWER NAME>** calling from Ewald and Wasserman, a national research firm working with Xcel Energy. I'm hoping to speak to someone at your organization who would be familiar with your participation in the Xcel Energy **<PROGRAM>** in **<MONTH> <YEAR>.** Our records show that you received a rebate from this program for completing a project at **<BUILDING_ADDRESS>, <CITY>, <STATE> <ZIPCODE>.** May I speak with **<CONTACT>?**

1. Yes, that would be me.

2. Yes, let me transfer you to the correct person **[IF NAME GIVEN, ENTER AS <CONTACT>; REPEAT QUESTION INTRO1 WITH NEW RESPONDENT]**

3. No, they are not available right now.

4. No, they are no longer employed by this organization.

5. No, other reason. **(SPECIFY)**

DK **[TERMINATE]**

REF **[TERMINATE]**

[ASK IF INTRO1=1, 4, OR 5]

Intro2. Are you the person at **<ORGANIZATION>** who is most familiar with your participation in the Xcel Energy **<PROGRAM>** program, or at least as familiar as anyone else there? We will be speaking with participating design teams and energy consultants as part of this research as well but want to make sure we capture the critically important customer perspective.

1. Yes.

2. No, they are not available right now.

3. No, that's someone else.

4. No, that person no longer works here.

5. Not applicable – this organization did not participate in any such program. **[TERMINATE]**

DK **[TERMINATE]**

REF **[TERMINATE]**

[ASK IF INTRO2=4]

Intro3. Is there someone else that is knowledgeable about your participation in the **<PROGRAM>** program?

1. Yes.

2. No **[TERMINATE]**

DK **[TERMINATE]**

REF **[TERMINATE]**

[ASK IF INTRO1 = 3 OR INTRO2=2-3 OR INTRO3=1]

Intro4. What is this person's name?

1. **[RECORD CORRECT PERSON'S NAME AS <CONTACT>]**

DK **[TERMINATE]**

REF **[TERMINATE]**

[ASK IF INTRO4=1]

Intro5. Would I reach that person by dialing the same number I used to connect with you: **<PHONE>**?

1. Yes

2. No, use a different number (RECORD HERE AS **<PHONE>**) **[THANK AND TERMINATE; REDIAL NEW SAMPLE CASE AND START WITH INTRO1]**

DK **[TERMINATE]**

REF **[TERMINATE]**

PROGRAMMER NOTE: Only those for whom Intro2=1 should get to this screen; the rest would end at Intro5 as they will need to be made into new sample cases and called back at a later time.

[ASK IF INTRO2=1]

Intro6. Great! (IF NEEDED: Again, we're Ewald and Wasserman, a national research firm calling on behalf of Xcel Energy). I would like to invite you to participate in a short survey that will help Xcel Energy improve the **<PROGRAM>** program to best suit the needs of businesses like yours. The survey takes about 20 minutes on average, and as a small token of appreciation, we are offering a $25 gift card that you will receive after completing the survey. Your responses will remain confidential, meaning that your name and company name will not be attributed to your answers.

Is now a good time or should we call you back?

1. No objection – fine to continue
2. Objection **[RESOLVE AND RESCREEN AS NECESSARY]**

REF **[TERMINATE]**

Section A: Firmographics, Operations, Participation

First, I'd like to gather some information about your involvement with the Xcel Energy **<PROGRAM>** program and your role at your organization.

[ASK ALL]

A1. What is your occupational title within your company?

1. Proprietor / Owner
2. President / CEO / Executive director
3. Chief financial officer
4. Facilities / Building manager
5. Energy manager
6. Other facilities / Maintenance position
7. Other financial / Administrative position
8. General manager
9. Operations
10. Other **[SPECIFY]**

DK

REF

[ASK ALL]

A2. Has your organization previously participated in any other Xcel Energy energy efficiency program before 2020?

1. Yes, **[SPECIFY; PROMPT: Do you recall the name of the program, if not, just a description is fine.]**
2. No, never participated in an Xcel Energy program

DK

REF

[ASK ALL]

A3. Given your knowledge of other Xcel Energy energy programs (whether as a participant or otherwise), do you see an opportunity for the **<PROGRAM>** program to work with these other programs?

[READ ONE AT A TIME]

A. Other energy efficiency programs
B. Renewable programs
C. Electric Vehicle programs

(For each A4a – A4c)

1. Yes
2. No

DK

REF

Section B: Awareness and Electrification Perceptions

[ASK ALL]

B1. How did you first become aware of Xcel Energy rebates for the **<PROGRAM>** program?

[DO NOT READ ALL THE BELOW; Code responses and use to clarify/probe if needed].

1. Xcel Energy program staff
2. Xcel Energy Account Manager or Business Solutions Center staff
3. **[IF <COMPONENT> = 1 (i.e. EDA)]** Energy modelers

4. **[IF <COMPONENT> = 2 (i.e. EEB)]** Xcel Energy third party consultant
5. Xcel Energy educational training
6. Xcel Energy sponsored development
7. Xcel Energy website, media promotions (TV, mass media ads) or other marketing materials
8. Xcel Energy event, expo, or demonstration
9. Xcel Energy staff at a trade show or other industry event
10. Design team professional
11. Another business or other word of mouth
12. Other [SPECIFY]

DK

REF

[ASK ALL]

B2. Are you familiar with the term "electrification?"

1. Yes, **very** familiar

2. Yes, **somewhat** familiar

3. No, **not at all** familiar

DK

REF

[If B2 = 1 or 2]

B2a. What does the term “electrification” mean to you?

1. [OPEN END, RECORD VERBATIM]

DK

REF

[IF B2=3 AND ASKED FOR DEFINITION] Electrification refers to the shift from any non-electric source of energy to electricity at the point where the energy is consumed.

[ASK IF B2 = 1 or 2]

B3. How would you describe your overall opinion of electrification, on a scale from 1 to 5, where 1 is “not at all favorable” and 5 is “very favorable”?

1. **[NUMERIC OPEN END, 1 – 5]**

77. Not applicable

DK

REF

[If B2 = 1 or 2]

B3a. Why would you say you view electrification **<if numeric response to B3 = 1 is 1-2, "unfavorable"; if numeric response to B3 = 1 is 6-10, "favorable">**?

1. **[RECORD VERBATIM]**

DK

REF

[ASK ALL]

B4. Are you interested in learning more about electrification?

1. Yes
2. No

DK

REF

Section C: Motivations

[ASK ALL]

C1. Next, please rate the importance of the following in terms of your decision to participate in the **<PROGRAM>** program, using a 1 to 5 scale where 1 is "not at all important" and 5 is "very important"? How important was…

(PAUSE AFTER EACH FOR RESPONSE. REPEAT SCALE IF NEEDED).

1. **[NUMERIC OPEN END, 1 – 5]**

NA

DK

REF

1. Xcel Energy rebates
2. **[SHOW IF <COMPONENT> = 1 (i.e., EDA)]** The energy/strategy analysis and presentation of design alternatives
3. **[SHOW IF <COMPONENT> = 2 (i.e., EEB)]** The energy efficiency measure recommendations
4. Verification of energy savings
5. Reducing energy use

6. Reducing the dollar amount of your energy bill

7. Interactions with your Xcel Energy account manager or an Xcel Energy Business Solutions Center representative

DK

REF

[ASK ALL]

C1a. Was there any other factor that influenced your decision to participate?

1. Yes **(SPECIFY)**
2. No

DK

REF

[ASK IF C1a = 1]

C1b. How would you rate the importance of that factor in terms of your decision to participate in the <PROGRAM> program, using a 1 to 5 scale where 1 is "not at all important" and 5 is "very important"?

1. [NUMERIC OPEN END, 1 - 5]

NA

DK

REF

[ASK IF <COMPONENT> = 1 (i.e., EDA)]

C2. Did you learn about the **<COMPONENT>** component of the **<PROGRAM>** program before or after you first began to think about including energy efficient design features in this building?

1. Before

2. After

3. Other **[SPECIFY]**

DK

REF

Section D: Free-ridership

Included as background only, NOT to be read during the survey:

Free-ridership is a measure of the amount of a Product's claimed savings that would have occurred in the absence of the program. 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 will apply the C&I New Construction Protocol from the Illinois TRM, and write specific questions to assess two free-ridership components:

- A **Program Components Score**, based on the participating customer's rating of the importance of various factors on their decision to carry out the energy-efficient project;
- A **Program Influence Score**, based on the participating customer's perception of the importance of various product factors, relative to the importance of non-product factors in their decision to carry out the energy-efficient project. This score will be used as a consistency check only, not a direct input into the NTG algorithm; and
- A **No-Program Score**, based on the participating customer's intention to carry out the energy-efficient project without product funds. The No-Program score will be set to zero if the participating customer responded "no" to the binary question asking if they would have installed the exact same measures if the program had not been available.

When scored, these components assess the likelihood of free-ridership on a scale of 0 to 10, with the two scores averaged and the timing adjustment applied to create a final free-ridership score.

[ASK ALL]

D0. In your own words, how would you describe the influence that the Xcel Energy **<PROGRAM>** program had on your decision to include energy efficient features in the final design of the building at **<BUILDING ADDRESS>?**

[RECORD VERBATIM]

DK

REF

D0_1. (INTERVIEWER: PLEASE READ THE FOLLOWING SLOWLY AND CAREFULLY)

Making decisions can sometimes be relatively simple, involving one major factor, like price. Or, they can be relatively complex involving multiple factors such as price, information provided by your utility, and concerns about high electricity bills.

[SELECT HALF OF PARTICIPANTS TO RANDOMLY BE READ D0_2 BEFORE D0_3; FOR THE OTHER HALF, READ D0_3 BEFORE D0_2]

D0_2. [SHOW IF D0_2 READ FIRST: "As part of this project, Xcel Energy offered you:" ; SHOW IF D0_2 READ SECOND: "There might be other things that influenced your decision such as materials provided by Xcel Energy. As part of this project, Xcel Energy offered you:"]

[RANDOMIZE THE FOLLOWING LIST]

- An incentive of **<DOLLAR_AMOUNT>**
- Information through marketing or informational and educational materials about the benefits of installing energy efficient equipment
- An endorsement or recommendation by your Xcel Energy account representative or other Xcel Energy staff, and
- Engineering or other technical assistance provided by Xcel Energy, by a third party that was funded through Xcel Energy, or support from prior participation in an Xcel Energy program.

D0_3. [SHOW IF D0_3 READ FIRST: "Many factors may" ; SHOW IF D0_3 READ SECOND: "There might be other things, not related to the program that might also"] have influenced your decision to install energy efficient equipment. For example, maybe:

- A desire for cost savings from lower electric bills,
- Company policies,
- Design team or contractor recommendations,
- Your own experiences with energy efficient equipment, or
- Your own research on energy efficienct equipment.

[ASK ALL]

D1. There are of course many other possible reasons.

Next, I'm going to ask a few questions about your decision to include energy efficienct design features in this building. Please rate the importance of each of the following factors on your decision to install energy efficient equipment or systems using a scale from 0 to 10, where 0 means "not at all important" and 10 means "extremely important". The bigger the number, the greater the influence. If you don't know, just say "I don't know". Now, how important was…

(RANDOMIZE D1a-D1r, REPEAT SCALE AS NECESSARY)

D1a. The rebates offered by Xcel Energy {**PROG FACTOR}**

[NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1b. An endorsement or recommendation by your Xcel Energy account manager or an Xcel Energy Business Solutions Center representative **{**PROG FACTOR}**

[NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1c. An endorsement or recommendation by the Xcel Energy project team **[ANCHOR POSITION – IMMEDIATELY AFTER D1B] {**PROG FACTOR}**

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1d. [ASK IF <COMPONENT> = 1 (i.e. EDA)] An endorsement or recommendation by an Xcel Energy affiliated energy modeler **[ANCHOR POSITION - IMMEDIATELY AFTER D1C] {**PROG FACTOR}**

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1e. [ASK IF <COMPONENT> = 1 (i.e. EDA)] The energy modeling offered through the <PROGRAM> program **{**PROG FACTOR}**

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1f. [ASK IF <COMPONENT> = 2 (i.e. EEB)] Support from the third-party consultants Xcel Energy contracts with to deliver the program **(i.e., Nexant) {**PROG FACTOR}**

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1g. Information from Xcel Energy marketing or informational materials **{**PROG FACTOR}**

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1h. Your previous participation in an Xcel Energy **program {**PROG FACTOR}**

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1i. Information received from any training or events conducted by Xcel **Energy {**PROG FACTOR}**

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1j. Previous experience with energy efficient equipment or materials

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

[ANCOR AFTER D1j, ASK IF D1j>5 AND D1j<11]

D1j_1. Was this experience through an Xcel Energy program?

1. Yes {**PROG FACTOR}
2. No

DK

REF

D1k. Corporate policy or guidelines

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1l. Environmental factors like reduced carbon emissions

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1m. Standard practice in your business/industry

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

D1n. Payback on the investment

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

[ASK IF D1n>5 AND D1n<11]

D1n_1. Did the Xcel Energy rebate factor into whether the payback timeline was acceptable?

1. Yes **{**PROG FACTOR}**
2. No

DK

REF

D1o. Minimizing operating cost

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

[ASK IF D1o>5 AND D1o<11]

D1o_1. Did Xcel Energy provide you with information on minimizing operating costs?

1. Yes **{**PROG FACTOR}**
2. No

DK

REF

[ASK IF D1o_1=1]

D1o_2. In your own words, how important was the information provided by Xcel Energy on minimizing operating costs in your decision to install this equipment?

1. [OPEN-END, VERBATIM]

DK

REF

D1p. Achieving a certification like LEED

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

[ASK IF D1p >5 AND D1p <11]

D1p_1. What is this certification?

[OPEN END, VERBATIM]

DK

REF

[ASK IF D1p > 5 AND D1p < 11]D1p_2. Did you learn about this certification through an Xcel Energy program?

1. Yes **{**PROG FACTOR}**
2. No

DK

REF

D1q. Recommendation from a design team member that helped you on the project

1. [NUMERIC OPEN END, 0 – 10]

NA

DK

REF

[ASK IF D1q > 5 AND D1q <11]

D1q_1. [ASK IF <COMPONENT> = 1 (i.e. EDA)] Was this recommendation made following the final energy/strategy analysis and packaging of design alternatives provided by the Xcel Energy energy consultants?

1. Yes **{**PROG FACTOR}**
2. No

DK

REF

[ASK IF D1q > 5 AND D1q <11]

D1q_2. [ASK IF <COMPONENT> = 2 (i.e. EEB)] Was this recommendation made after meeting with the third-party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant) to identify energy efficiency opportunities?

1. Yes **{**PROG FACTOR}**

2. No

DK

REF

D1r. Were there any other factors that were important to your decision to participate in the program?

(ASK OPEN END)

1. Yes **(SPECIFY, RECORD VERBATIM)**

2. No additional factors

DK

REF

[ASK IF D1r = 1]

D1r_1. How important was **[factor specified]** on your decision to install energy efficient equipment or systems using a scale from 0 to 10, where 0 means "not at all important" and 10 means "extremely important". Again, the bigger the number, the greater the influence.

[NUMERIC OPEN END, 0 – 10]

NA

DK

REF

[CREATE INTERNAL VARIABLE: Max_ProgramFactor.

IF D1j_1 = 2/DK/REF AND D1o_1 = 2/DK/REF AND D1p_2 = 2/DK/REF AND (D1q_1 = 2/DK/REF AND D1q_2 = 2/DK/REF] AND D1n_1 = 2/DK/REF = max (D1a, D1b, D1c, D1d, D1e, D1f, D1h, D1i)

IF D1j_1= 1 à max (D1a, D1b, D1c, D1d, D1e, D1f, D1g, D1h, D1i, + D1j)

IF D1o_1 = 1 à max (D1a, D1b, D1c, D1d, D1e, D1f, D1g, D1h, D1i, + Dio)

If D1p_2 = 1 à max(D1a, D1b, D1c, D1d, D1e, D1f, D1g, D1h, D1i, + D1p)

If D1q_1 = 1 OR D1q_2 = 1 à max(D1a, D1b, D1c, D1d, D1e, D1f, D1g, D1h, D1i, + D1q)

D1n_1 = 1 à max(D1a, D1b, D1c, D1d, D1e, D1f, D1g, D1h, D1i, + D1n)

[ASK ALL]

D5a. If the incentive, information, and support from the Xcel Energy **<PROGRAM>** were not available, would you have built the facility at **<BUILDING ADDRESS>** to the exact same efficiency level including installing the *exact same number, type, model, and efficiency* of equipment and the exact same building assemblies? If you are not sure, please let me know.

1. Yes
2. Maybe / not sure
3. No

77. Would not have installed energy efficient equipment at all

REF

[**IF NEEDED:** efficient building assemblies include the building shell (e.g., windows, doors, roof, foundation) and its components (e.g., high performance insulation, high performance glazing).]

[ASK IF D5a = 3, 77]

D5a_1. Why would you not have built the facility at **<BUILDING ADDRESS>** to the exact same efficiency level including installing the *exact same number, type, model, and efficiency* of equipment and the exact same building assemblies?

1. **[OPEN END, RECORD VERBATIM]**

DK

REF

[IF D5a_1 = 1 AND VERBATIM IS response cost related]

D5a_2. Would the energy efficiency equipment or efficient assemblies been removed during the value engineering process?

1. Yes
2. No

DK

REF

[ASK IF D5a=1,2,REF, ELSE SKIP TO S1]

D5b. Using a scale from 0 to 10, where 0 means “not at all likely” and 10 means “extremely likely”, please rate the likelihood that you would have built the facility at **<BUILDING ADDRESS>** to the exact same efficiency level including installing the *exact same*

number, type, model, and efficiency of equipment and the exact same building assemblies if the Xcel Energy **<PROGRAM>** was not available.

1. **[NUMERIC OPEN END, 0 - 10]**

DK

REF

PROGRAMMING NOTE:

if (ans = 0) skp D5e

if (ans = 1) skp D5e

if (ans = 2) skp D5e

if (ans = 7) skp D5d

if (ans = 8) skp D5d

if (ans = 9) skp D5d

[ASK IF D5b=10]

D5c. To clarify, you just told me that it is extremely likely that you would have built the facility at **<BUILDING ADDRESS>** to the exact same efficiency level including installing the *exact same number, type, model, and efficiency* of equipment and the exact same building assemblies if you did not have any support, information, or rebates from the **<PROGRAM>** program.

Is that correct, or do you want to change the likelihood that you would have installed the *exact same equipment* without support from Xcel?

1. Yes, rating is correct**.**

2. No, rating is incorrect, want to change likelihood **[LOOP BACK TO D5b]**

DK

REF

[ASK IF D5b = 7-9 and Max_ProgramFactor > 7]

D5d. You just rated your likelihood to install energy efficient equipment and efficient building assemblies without any support or incentives from the **<PROGRAM>** program as a(n) **<RESTORE RESPONSE FROM D5b>** out of 10, suggesting that the program was not very important. Earlier, when I asked you to rate the importance of each program factor on your decision, the highest rating you gave was a **<Max_ProgramFactor>** out of 10,

suggesting that the program was very important. Is this correct or should I go back and change one of your answers?

1. Correct – leave answers as is
2. Change the likelihood of installing energy efficient equipment without the program **[RETURN TO D5b]**
3. Change the influence of the program factors

DK

REF

[ASK IF D5b < 3 and Max_ProgramFactor < 3]

D5e. You just rated your likelihood to install energy efficient equipment and efficient building assemblies without any support incentives from the **<PROGRAM>** program as a(n) **<RESTORE RESPONSE FROM D5b>** out of 10, suggesting that the program was very important. Earlier, when I asked you to rate the importance of each program factor on your decision, the highest rating you gave was a **<Max_ProgramFactor>** out of 10, suggesting that the program was not very important. Is this correct or should I go back and change one of your answers?

1. Correct – Leave answers as is
2. Change the likelihood of installing energy efficient equipment without the program **[RETURN TO D5b]**
3. Change the influence of the program factors

DK

REF

[ASK IF D5d = 3 OR D5e = 3]

D5FactorUpdate. You said you would like to change the influence of program factors. Which factor(s) would you like to change and what would you like to change them to? (Lower # = Lower importance, Higher # = Higher importance)

1. The rebates offered by Xcel Energy (you said %D1a%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

2. An endorsement or recommendation by your Xcel Energy account manager or an Xcel Energy Business Solutions Center representative (you said %D1b%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

3. An endorsement or recommendation by the Xcel Energy project team (you said %D1c%/ / 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

4. **[ASK IF <COMPONENT> = 1 (i.e. EDA)]** An endorsement or recommendation by an Xcel Energy affiliated energy modeler (you said %D1d%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

5. **[ASK IF <COMPONENT> = 1 (i.e. EDA)]** The energy modeling offered through the **<PROGRAM>** program (you said %D1e%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

6. **[ASK IF <COMPONENT> = 2 (i.e. EEB)]** Support from the third-party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant) (you said %D1f%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

7. Information from Xcel Energy marketing or informational materials (you said %D1g%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

8. Your previous participation in an Xcel Energy program (you said %D1h%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

9. Information received from any training or events conducted by Xcel Energy (you said %D1i%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

10. Previous experience with energy efficient equipment or materials (you said %D1j%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

11. Payback on the investment (you said %D1n%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

12. Minimizing operating cost (you said %D1o%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

13. Achieving a certification like LEED (you said %D1p%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

14. Recommendation from a design team member that helped you on the project (you said %D1q%/ 10) **[SPECIFY, NUMERIC OPEN-END, 0 TO 10]**

Section S: Spillover

[ASK ALL]

S1. Since your participation in the **<PROGRAM>** in **<MONTH> <YEAR>**, has your company installed any additional energy efficiency improvements at this building or at your other buildings in areas where Xcel Energy provides electricity or natural gas without a rebate from Xcel Energy?

1. Yes
2. No

DK

REF

[ASK IF S1=1, ELSE SKIP TO SECTION E]

S1a. Can you briefly explain why you decided to install this energy efficiency equipment on your own, rather than through a utility incentive program?

1. **[OPEN END, RECORD VERBATIM]**

DK

REF

[ASK IF S1 = 1, ELSE SKIP TO SECTION E]

S2. Did your experience with the energy efficiency equipment you installed through the Xcel Energy **<PROGRAM>** influence your decision to install some or all of the additional efficient equipment on your own?

1. Yes
2. No

DK

REF

[ASK IF S2=1, ELSE SKIP TO SECTION E]

S2a. What type(s) of efficient equipment did you install without a rebate? For example, was it…?

1. Lighting or lighting controls
2. Chillers
3. Packaged roof-top units (RTUs) or Packages AC/HVAC system
4. Windows, cool roofs, or insulation

[DO NOT READ ALL THE BELOW; Code responses and use to clarify/probe if needed].

4.. Boilers

5. Variable frequency drives/VFDs

6. Refrigeration equipment

7. Compressed air equipment

8. Cooking and food service equipment

9. Water heating equipment

10. Energy Management Systems (EMS), controls and thermostats

11. Or something else? **<SPECIFY>**

DK

REF

[ASK S2b-S2f IF S2 = 1 FOR UP TO TWO MEASURES, CODING RESPONSES WITH S2b_1 and S2b_2 FOR FIRST AND SECOND MEASURES, RESPECTIVELY]

I have a few questions about the **[first, second]** equipment that you installed.

S2b. Approximately how many of this type of equipment did you install?

1. **[OPEN END]**

DK

REF

S2c. Please describe the **SIZE**, **TYPE**, and **OTHER ATTRIBUTES** of this measure.

1. **[OPEN END, RECORD VERBATIM]**

DK

REF

S2d. What was the **EFFICIENCY** of this measure? Was it…

1. Standard efficiency

2. High efficiency

DK

REF

S2e. How important was your experience in the **<PROGRAM>** in your decision to install the additional energy efficiency equipment on your own? Please use a scale from 0 to 10, where 0 is "not at all important" and 10 is "extremely important".

1. **[NUMERIC OPEN END (0-10)]**

DK

REF

S2f. If you had not participated in the **<PROGRAM>**, how likely is it that your organization would have installed the additional energy efficiency equipment, 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?

1. **[NUMERIC OPEN END (0-10)]**

DK

REF

[END LOOP FOR EACH MEASURE]

Section E: Barriers

[ASK ALL]

E1. Did you consider installing any additional energy efficient equipment, systems, or designs at **<BUILDING_ADDRESS>** beyond the equipment that you installed?

1. Yes **[SPECIFY]**
2. No, all recommended equipment was installed.
3. No, all equipment suitable for this building was installed.

DK

REF

[ASK IF E1 = 1, ELSE SKIP TO SECTION F]

E2. Why did you decide not to install that equipment? Was it:

1. Upfront costs
2. Payback period
3. The equipment was too complicated to operate or maintain
4. Insufficient time during the design phase
5. Insufficient time during the construction phase
6. The equipment was a bleeding edge technology [**IF NEEDED:** a bleeding edge technology is a category of technologies that is so new that It is associated with high risk for the lead adopters]

DK

REF

Section F: Program Implementation and Processes

Next, I want to ask you a few questions about your experience with the program, and how the program's processes worked for you.

[ASK ALL]

F1. I am going to ask you to rate how easy or difficult the following tasks associated with the **<PROGRAM>** were to complete, using a scale from 1 to 5, where 1 is "very difficult" and 5 is "very easy". You may also tell me if something was not applicable to your experience. How would you rate the ease of…

(PAUSE AFTER EACH FOR RESPONSE. REPEAT SCALE IF NEEDED).

1. **[NUMERIC OPEN END, 1 – 5]**

NA

DK

REF

(RANDOMIZE QUESTIONS)

F1a. Completing the program application

F1b. Meeting program deadlines

F1c. Getting in touch with an Xcel Energy Product representative

F1d. [SHOW IF <COMPONENT> = 1 (i.e., EDA)] Getting in touch with energy consultants

F1e. [SHOW IF <COMPONENT> = 2 (i.e., EEB)] Getting in touch with the third party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant)

F1f. [SHOW IF <COMPONENT> = 1 (i.e., EDA)] Selecting energy efficiency opportunities that align with first cost, payback, and energy efficiency expectations

F1g. [SHOW IF <COMPONENT> = 1 (i.e., EDA)] Meeting minimum savings requirements

F1h. [SHOW IF <COMPONENT> = 2 (i.e., EEB)] Selecting qualifying energy efficiency equipment

[For each F1a-h < 3]

F2a – F2h. Why was it not easy to **<RESTORE QUESTION WORDING FROM E1A – E1G>**

1. **[OPEN-END, RECORD VERBATIM]**

DK

REF

[ASK ALL]

F3. From the time work started to the time you received your rebate, did the project take less or more time than you expected to complete? Please answer using a scale from 1 to 5, where 1 means the project took "much less time than expected" and 5 means it took "much more time than expected".

1. **[NUMERIC OPEN END, 1 – 5]**

77. Have not completed project / received rebate

DK

REF

Section G: Satisfaction (Programs and Components)

[ASK ALL]

G1. Thank you for your patience; we have only a few questions left. I'm going to ask you to rate your satisfaction with various aspects of the program. For each, please rate your satisfaction on a scale from 0 to 10, where 0 is "very dissatisfied" and 5 is "very satisfied", or let me know if it is not applicable to your project. How would you rate your satisfaction with:

[RANDOMIZE, PAUSE AFTER EACH FOR RATING, REPEAT SCALE IF NECESSARY]

1. **[NUMERIC OPEN END, 0 – 5]**

NA

DK

REF

(RANDOMIZE)

G1a. [SHOW IF <COMPONENT> = 1 (i.e. EDA)] The energy/strategy analysis to select a design alternative incorporating energy efficiency opportunities

G1b. [SHOW IF <COMPONENT> = 2 (i.e. EEB)] The consulting experience to determine energy efficient equipment / measures

G1c. The amount of time it took to receive your rebate

G1d. The dollar amount of the rebate

G1e. The structure of the incentive (i.e., kWh savings incentives aligned with time-of-use rates and peak coincident demand savings rebates)

G1f. Your interactions with Xcel Energy Product staff

G1g. [SHOW IF <COMPONENT> = 1 (i.e. EDA)] Your interactions with your energy modelers

G1h. [SHOW IF <COMPONENT> = 2 (i.e. EEB)] Your interactions with the third party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant)

G1i. The information you received on energy efficiency

G1j. The information you received on how to operate / maintain Installed equipment

G1k. The energy savings realized after the program

[For each G1a-k < 3]

G2a – G2k. Why weren't you satisfied with **<RESTORE QUESTION WORDING FROM G1A – G1k>**

1. **[OPEN-END, RECORD VERBATIM]**

DK

REF

[ASK ALL]

G3. Thinking about your experience from start to finish, how would you rate your satisfaction with the **<PROGRAM>** as a whole? (IF NEEDED: Please use the same scale from 0 to 10, where 0 is "very dissatisfied" and 10 is "very satisfied")

1. **[NUMERIC OPEN-END, 0 - 5]**

NA

DK

REF

[ASK IF G3 < 3]

G3a. Why weren't you satisfied with your experience with the **<PROGRAM>?**

1. **[OPEN END, RECORD VERBATIM]**

NA

DK

REF

[ASK IF G3 = 3 or 4]

G3b. What else could Xcel Energy do to improve your satisfaction with the **<PROGRAM>?**

1. **[OPEN END, RECORD VERBATIM]**

NA

DK

REF

[ASK ALL]

G4. What did you like most about your experience with the **<PROGRAM>?**

1. **[OPEN END, RECORD VERBATIM]**

NA

DK

REF

[ASK ALL]

G5. Do you have an interest in installing any of the following electrification technologies and practices?

[Read G5a – G5d one at a time, receiving answers before moving on to the next one]

G5a. Geothermal technology

G5b. Electric Vehicle chargers

G5c. High-efficiency heat pumps

G5d. Demand response controls

[ASK ALL]

G6. Are there any other technologies you are interested in that weren't previously mentioned?

1. **[OPEN END]**

DK

REF

Section CLOSE: Closing

CLOSE1. Is there anything we didn't cover that you'd like to mention or discuss about your experiences as a participant in the **<PROGRAM>** program, including recommendations for program improvements?

CLOSE2. These are all the questions I have. As a thank you for your input, we'd like to email you, or someone of your choosing, a $25 Tango gift card. We just need a bit of information to email the gift card to the intended recipient.

[COLLECT CONTACT INFORMATION]

[IF INTERVIEWEE ASKS ABOUT GIFT CARD] The $25 e-gift card is a Tango gift card whichh is a digital gift card that can be redeemed at a variety of retailers, including Amazon, Apple, and Target, among others. In the next two weeks we will send you a link to redeem your gift card on the Tango website

[IF <CONTACT> ASKS]

We also have an option to donate the $25 to United Way.

[IF CONTACT ASKS FOR MORE INFO ABOUT UNITED WAY] United way is a worldwide non-profit that focus on education, income, and health which they believe are the building blocks for a good quality of life. They have local chapters throughout the US.

B.3 Nonparticipating Trade Partner Interview Guide

Introduction

To support the process and impact evaluation of the 2021 Xcel Energy energy efficiency products, the TRC Companies (TRC) evaluation team will conduct interviews with nonparticipating trade partners. For the purposes of this guide, the evaluation team defined nonparticipating trade partners as those who are not included in the Xcel Energy BNC trade partner contact list provided to the evaluation team in July 2021. The research will be conducted to assess key process and impact evaluation objectives including barriers to participation and net-to-gross (NTG) impacts, such as nonparticipant spillover and market effects.

The remainder of the introduction provides the research questions which the nonparticipating customer interview guide is designed to address.

Evaluation Objectives

The process and impact objectives for the Colorado New Construction product evaluation are to:

- Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.
- Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.
- Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.
- Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).
- Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.
- Identify possible product improvements that would increase product savings, with a focus on peak demand savings and Time-of-Use (TOU), and support local communities in meeting their energy goals.
- Determine NTG ratio for Energy Design Assistance (EDA) and Energy Efficient Building (EEB) component incentives (i.e., one NTG ratio for both components).
- Identify major drivers of free ridership.
- Assess participating and nonparticipating customer spillover.
- Assess market effects of the Colorado New Construction product.

The nonparticipating trade partner interviews do not address every evaluation objective. For reference, Table 9 provides the evaluation efforts used for each objective.

Table 9: New Construction Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Nonparticipating Trade Partner Interview Objective
Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.	Process	Participating customer survey, nonparticipating trade partner interviews, trade partner interviews	✓

Evaluation Objective	Impact or Process Objective	Research Activity	Nonparticipating Trade Partner Interview Objective
Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.	Process	Participating customer survey, trade partner interviews	
Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.	Process	Participating customer survey, trade partner interviews, benchmarking interviews	
Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).	Process	Participating customer survey, nonparticipating trade partner interviews, trade partner interviews	✓
Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.	Process	Participating customer survey, nonparticipating trade partner interviews, trade partner interviews, benchmarking interviews	✓
Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.	Process	Trade partner interviews, benchmarking interviews	

Evaluation Objective	Impact or Process Objective	Research Activity	Nonparticipating Trade Partner Interview Objective
Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components).	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Identify major drivers of free ridership.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	
Assess participating and nonparticipating customer spillover.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Assess market effects of the Colorado New Construction Product.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓

Specific research questions which this nonparticipating trade partner interview guide is designed to address are the following:

- What are nonparticipating trade partners perceptions of energy-related initiatives, such as electrification and electric vehicle (EV) and infrastructure readiness?
- Are nonparticipating trade partners aware of the Colorado New Construction Product? How is the Product perceived among nonparticipating trade partners?
- What barriers impact nonparticipating trade partners' and their customers' decisions to participate in the Colorado New Construction Product?
- What barriers impact nonparticipating trade partners' and their customers' decisions to install energy-efficient equipment or systems?
- How do changes in above code savings impact trade ally and customer ability to participate in the Product? Do design teams perceive more stringent energy codes to be a barrier to participation in the Product?
- Are nonparticipating trade partners installing energy-efficient equipment or systems due to any influence from Xcel Energy outside of the Product?

Table 10 presents the link between each evaluation objective, research question, and survey question.

Table 10: Evaluation Objective, Research Question, and Interview Question Crosswalk

Evaluation Objective	Research Question	Interview Question Number (s)
Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.	Are nonparticipating trade partners aware of the Colorado New Construction Product? How is the Product perceived among nonparticipating trade partners and their customers?	B1, B1a, B1b, B2, B3, B4, C2, C2a, C4, C4a, C5, C6, C6a, C7
	What barriers impact nonparticipating trade partners' and their customers' decisions to participate in the Colorado New Construction Product?	
	What barriers impact nonparticipating trade partners' and their customers' decisions to install energy-efficient equipment or systems?	
Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).	What are nonparticipating trade partners' perceptions of energy-related initiatives, such as electrification and electric vehicle (EV) and infrastructure readiness?	F1, F1a, F1b, F1b, F2, F2a, F2b, F2c, F3, F3a, F3b, F3c, F4, F4a,
Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.	How do trade partners see changes in above code savings impacting customer ability to participate in the Product? Do nonparticipating trade partners perceive more stringent energy code to be a barrier to participation in the Product?	F5, F6, F6a, F6b

Evaluation Objective	Research Question	Interview Question Number (s)
Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components).	Are nonparticipating trade partners' customers installing energy-efficient equipment or systems due to any influence from Xcel Energy outside of the Product?	C2, C2a, E1, E1a, E1b, E2, E3, E3a, E4, E5, E6

Recruiting Instructions

The evaluation team plans to send advance emails to contacts. This email contains an explanation of the research, as well as both an Xcel Energy and TRC representative the potential interviewee can contact if they have additional questions or would like to schedule an interview at their convenience.

Consultants on the evaluation team, who will be conducting interviews and have been trained on the purpose and goals of the Colorado C&I New Construction Evaluation qualitative research, will recruit potential respondents. The evaluation team will be as flexible as possible in scheduling these interviews, including scheduling early morning or evening interviews when possible to accommodate the busy schedules respondents may have. The evaluation team will leave a voicemail or receptionist message on the first attempt whenever possible, and then use discretion to determine any additional messages left on subsequent attempts. The evaluation team will attempt to contact each contact a minimum of 4 times before terminating contact, but depending on each unique situation, the evaluation team may need to attempt additional contacts to ultimately reach the correct person.

We will provide a $50 Tango e-gift card as an incentive for completed interviews.

Interview Instructions

This guide is designed to apply to a wide range of potential respondents. As such, the questions are written deliberately to be open-ended and flexible. The questions should be understood as concepts to explore rather than a verbatim script. In particular, the bulleted follow-up questions should be considered possibilities to probe further but may not apply to all respondents.

Interview

Introduction/Recruitment

INTRO 1 Hello, this is **INTERVIEWER NAME**, calling from TRC Companies on behalf of Xcel Energy.

INTRO 2 We are working with Xcel Energy on a study to understand the commercial new construction market in Colorado and are offering a $50 gift card for eligible participants. Xcel Energy has identified **<ORGANIZATION NAME>** as an organization they would love to speak to as part of this study. We're hoping to

speak with someone knowledgeable about the design process and customer decision-making. Would that be you or could you connect us to someone at your organization?

[IF YES] Great. I just have one follow up question to confirm that you're eligible. Does your organization work on commercial facilities that are 10,000 square-feet or larger? **[IF YES = eligible]**

[IF NOT ELIGIBLE] Thank you for your interest, but unfortunately you don't qualify for this study.

[IF ELIGIBLE] We would love to schedule some time to speak with you. It would be about a 30-45 minute phone interview and as a thank you for your time we would send a $50 e-gift card. Is there some time over the next few weeks that might work for you?

[IF INTERVIEWEE ASKS ABOUT TYPES OF QUESTIONS / CONTENT OF INTERVIEW] We'll be asking you questions about the commercial construction market generally, as well as how your customers make decisions about energy efficiency (if at all). We'll also ask a few questions about your awareness of Xcel Energy's New Construction program.

[IF INTERVIEWEE ASKS ABOUT GIFT CARD] The $50 gift card is a Tango gift card which is a digital gift card that can be redeemed at a variety of retailers, including Amazon, Apple, and Target, among others. Within a couple weeks after completing the interview, you will be sent a link to the Tango website where you can select the retailer of your choice.

[INTERVIEWER NOTE: Request participant permission to audio record the interview prior to beginning recording]

Section A: Introduction

To help us with note taking, is it alright if we record this conversation? All of your responses will remain anonymous.

To provide me with valuable context for each interview when completing the analysis later, it helps to begin each discussion with an overview of your role and responsibilities.

A1. To start, can you describe your role and scope of responsibilities at your business?

A1a. How long have you been in this role?

[IF <5 years]

A1b. What position did you hold prior to this role? What were your responsibilities in this role?

A1c. What sectors or market segments does your organization typically work in (e.g., healthcare, multifamily, office buildings)?

A2. Has your organization ever participated in the Colorado New Construction program offered by Xcel Energy?

[IF NEEDED] This could include either the Energy Design Assistance (EDA) component or the Energy Efficiency Buildings (EEB) component. The EDA component is more comprehensive and involves integrated design modeling completed by Xcel Energy approved energy consultants. The EEB component provides incentives for energy efficiency measures including heating, cooling, lighting, refrigeration, building envelope, and electric motors as well as custom incentives for other custom opportunities.

[IF YES] Do you recall what year you last participated?

[IF YES] What component did you participate in (i.e., EDA vs. EEB)?

[END INTERVIEW IF CURRENT PARTICIPANT]

Section B: Awareness and Barriers to Participation

Next, I'd like to understand a little more about your awareness of the Xcel Energy Colorado New Construction program.

B1. Before today, how familiar would you say you were with the New Construction program offered by Xcel Energy?

[PROBE FOR] incentive structure, size requirements, application timing requirements, savings requirements

[IF AWARE]

B1a. How did you first hear about the program offerings?

B1b. What if anything prevented you from participating in the Colorado New Construction program offered by Xcel Energy?

[IF UNAWARE]

B1c. Would you be interested in learning more about this program?

[ASK ALL]

B1d. What would be the best way for Xcel Energy to reach out to you about this program?

[IF UNAWARE/NEEDED] Before I ask you the next question, I want to provide a bit more detail about the Xcel Energy New Construction program. This program includes components, Energy Design Assistance (EDA) and Energy Efficient Buildings (EEB).

EEB is designed for smaller buildings or those buildings with simple systems that do not require full-scale energy modeling, have tighter budgets, and/or are engaged later in the design process (typically after the schematic design phase). EEB offers prescriptive incentives for a comprehensive list of typical energy efficiency measures including heating, cooling, lighting, refrigeration, building envelope, and electric motors as well as custom incentives for other custom opportunities.

EDA is more comprehensive as it engages participating customers early in the design process and uses integrated design modeling.

B2. What if anything could Xcel Energy do to help you participate in the Colorado New Construction program in the future?

[PROBE FOR] Energy modeling, equipment recommendations, design alternatives

[IF PARTICIPATED PREVIOUSLY]

B3. What did you like most about your experience with the Colorado New Construction Program? What did you like least?

B4. What, if anything, prevented you from participating in the Colorado New Construction program in recent years?

[PROBE FOR] Difficulty achieving above code savings, program processes, client pushback or disinterest

Section C: Trade Partners' Perspective on Customer Barriers

Next I'd like to ask you some questions on your perceptions of your client's barriers to including energy-efficient equipment and features in their building design.

[IF MULTIPLE BUILDING TYPES] As we go through these questions and the rest of the interview, if you could focus your responeses in the context of those new commercial buildings that are larger than 10,000 square feet.

C1. What considerations, if any, are important to your clients when determining what energy-using equipment or systems to include in their building design?

C1a. Thinking about what we just discussed, which of those considerations is most important?

Probe if needed: first cost, previous experience with equipment, recommendations from design teams or contractors, return on investment, payback, lower bills, environmental considerations

C2. What types of energy-efficient / high efficiency equipment do your clients typically install in their buildings, if any?

PROBE FOR: specific above code technologies (i.e., is that technology a higher efficiency than what is required by the local energy code?

[IF YES] In your opinion, why do clients include energy efficient equipment in their building design?

PROBE: energy cost savings, marketing, green building certification, etc.

[IF NO] What, if anything, prevents your clients from considering energy efficient equipment in their design?

C4. What challenges, if any, impacts your clients' ability to install energy-efficient equipment, systems, or designs? Specifically, are there instances where clients have considered energy efficient design strategies but do not include those strategies in the final building?

C4a. Is there anything that could help them to overcome that challenge?

PROBE: up-front costs, limited knowledge about energy efficient equipment, time, etc.

ASK IF CLIENTS INCLUDE EE EQUIPMENT / SYSTEMS IN DESIGNS

C5. Under what circumstances do you think clients would install more energy efficient equipment, or equipment that created larger amounts of energy savings?

PROBE: More knowledge of EE options?

More familiar with successful implementation of EE equipment?

Lower up-front costs?

Greater energy savings?

Less rushed construction schedules?

If client paid utility bills (i.e., no split incentive)?

Future tenant/owner expressed interest in EE?

C6. Do you ever recommend measures that would yield high levels of energy savings, but that might be more complicated to install or operate, or involve higher up-front costs? Why or why not?

C6a. When presenting these recommendations, how perceptive are customers to an energy efficiency framing? What about future return on investment or cost savings?

ASK IF CLIENTS DON'T INCLUDE EE EQUIPMENT / SYSTEMS IN DESIGNS

C7. For clients that don't include EE technology, is there anything that you think would prompt them to begin including EE equipment and systems in their buildings?

PROBE: More knowledge of EE options?

More familiar with successful implementation of EE equipment?

Lower up-front costs?

Greater energy savings?

Less rushed construction schedules?

If client paid utility bills (i.e., no split incentive)?

Future tenant/owner expressed interest in EE?

Section E: Spillover & Market Effects

For this next section, I'm going to ask you some questions that are more specific to Xcel Energy's activities and influence on the broader construction market.

E1. Have your clients ever built any efficient new buildings without applying for a rebate from Xcel Energy? Specifically, new buildings that were built in Xcel Energy service territory that would have been eligible for an Xcel Energy rebate (i.e., greater than 10,000 sf)?

E1a. Do you know if they applied for or obtained a rebate from any alternative source?

[PROBE FOR DETAIL]

[IF E1 = YES]

E1b. For these efficient new buildings in Xcel Energy territory that your clients did not receive a rebate for, do you know why they did not apply for an Xcel Energy rebate?

E2. What impacts your organization's decision to recommend installing efficient equipment in new buildings to your clients, if anything?

[PROBE FOR] Xcel Energy and/or Program influence including through end use efficiency products (e.g., motors, lighting) and interactions with manufacturers, distributors, or installers.

E3. How has prior experience receiving rebates influenced your decision-making process related to installing efficient equipment, if at all? To applying for rebates?

E3a. How do you think your *clients* experience receiving rebates has influenced their decision-making process related to installing efficient equipment, if at all? To apply for rebates?

E4. Have you ever attended a trade group event that Xcel Energy sponsored or spoke at?

[IF YES] What topics were discussed at this event? **[IF EE TOPICS]** Did you or your organization make any changes to your building or marketing practices based on information received at this event?

E5. Are you aware of Xcel Energy presenting at or contributing to any regulatory or policy discussions around building energy codes or new construction?

[PROBE FOR DETAILS]

[IF YES] Did you or your organization make any changes to your building or marketing practices based on these regulatory or policy discussions?

E6. How familiar are you with Xcel Energy otherwise influencing the commercial new construction market through talking with trade groups, state legislation, or other actions?

[PROBE FOR DETAILS]

Section F: Evolving Market Place

Next are a few questions about the new construction market in Colorado more generally.

F1. What role does energy efficiency play in your decisions around building design and/or construction?

F1a. What is your overall perception of the importance clients' place on having energy efficiency as an important design and construction consideration?

F1b. How comfortable would you say you are making recommendations about energy-efficient designs, systems, and equipment?

Probe: Is there anything that you find difficult to communicate to clients?

F1c. How comfortable are your clients in making energy efficiency decisions?

F2. What do you see as new / emerging energy efficiency opportunities for business new construction customers?

F2a. How do these emerging opportunities impact your recommendations to customers, if at all?

F2b. Do you ever recommend specific electrification technologies (e.g., heat pump, solar, induction cooktop)?

F2c. Do you ever recommend specific control technologies (e.g., controls that allow participation in programs that adjust loads to a utility-generated price signal?)

F3. Are you familiar with the term "electrification"?

[IF NO] Electrification refers to the shift from any non-electric source of energy to electricity at the point the energy is consumed.

[**IF YES**]

F3a. What does it mean to your business and your interactions with clients?

F3b. Have you noticed a shift toward electrification in building design and construction?

[IF YES] How do you feel about the shift?

[IF NO] Do you predict this shift will occur?

F3c. Do you ever recommend customers pursue all electric buildings? Why or why not?

F4. To what extent does your business consider electric vehicle (EV) readiness in building design and construction?

[IF CONSIDER EV READINESS]

F4a. Where you consider EV readiness, what drives this consideration?

PROBE FOR: community EV readiness ordinances, customer request

F4b. How open are customers to the inclusion of EV chargers?

F5. Has the energy code been updated recently in the jurisdictions that you frequently work in? **[IF YES]** In which jurisdiction(s)? What code did [jurisdiction] move to?

[IF F5 = YES]

F6. What impact does adoption of new energy codes with higher performance expectations have on new construction in your experience?

F6a. How have these changes to the energy code impacted the energy efficiency of your designs or the measures your recommend, if at all?

F6b. Are your customers aware of these changes to the energy code?

Section G: Closing

G1. Is there anything that we haven't discussed today that you feel that we should know about?

G2. Those are all the questions I have for you today. Do you have any questions for me, or anything else you would like to add?

G3. Great! Thank you so much for your time. We really appreciate your feedback. As a thank you for your time and valuable input we would like to send you a $50 Tango e-gift card. What is the best email address to send this e-gift card to?

[IF INTERVIEWEE ASKS ABOUT GIFT CARD] The $50 e-gift card is a Tango gift card which is a digital gift card that can be redeemed at a variety of retailers, including Amazon, Apple, and Target, among others. In the next two weeks we will send you a link to redeem your gift card on the Tango website.

B.4 Participating Trade Partner Interview Guide

Introduction

To support the process and impact evaluation of the 2020 Xcel Energy energy efficiency products, the TRC evaluation team conducted telephone interviews with 14 trade partners participating in the Xcel Energy Colorado New Construction Program. This guide presents the questions that were covered in these in-depth interviews.

This guide was designed to facilitate interviews with trade partners to explore product awareness and motivations for participation, identify barriers to participation, explore opportunities to increase the number and depth of the projects trade partners complete, and learn how business new construction projects vary outside of Xcel Energy service territory. For these interviews, we defined trade partners as those companies that supported the design process and construction of a building completed via the New Construction Program (e.g., architecture and engineering firms).

The remainder of the introduction provides the research questions which this guide was designed to address. The following list of objectives are also presented in Table 1, alongside the interview questions intended to address them.

Evaluation Objectives

The process and impact objectives for the CO New Construction product evaluation were to:

- Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.
- Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.
- Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.
- Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and

understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).

- Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.
- Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.
- Determine NTG ratio for Energy Design Assistance (EDA) and Energy Efficiency Buildings (EEB) component incentives (i.e., one NTG ratio for both components).
  - Identify major drivers of free ridership.
  - Assess participating and nonparticipating customer spillover.
  - Assess market effects of the Colorado New Construction product.

The trade partner interview does not address every evaluation objective. For reference, Table 11 provides the evaluation efforts used for each objective.

Table 11: New Construction Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Trade Partner Interview Objective
Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews	✓
Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.	Process	Participating customer survey, trade partner interviews	✓

Evaluation Objective	Impact or Process Objective	Research Activity	Trade Partner Interview Objective
Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.	Process	Participating customer survey, trade partner interviews, benchmarking interviews	✓
Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews	✓
Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews, benchmarking interviews	✓
Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.	Process	Trade partner interviews, benchmarking interviews	✓
Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components).	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Identify major drivers of free ridership.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓

Evaluation Objective	Impact or Process Objective	Research Activity	Trade Partner Interview Objective
Assess participating and nonparticipating customer spillover.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Assess market effects of the Colorado New Construction Product.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓

Specific research questions which this trade partner interview guide was designed to address are the following:

- What aspects of the programs are easy / challenging for design teams?
- How well are the Product's processes working for design teams?
- What are design teams' perceptions of energy-related initiatives such as electrification and electric vehicle (EV) and infrastructure readiness?
- How do design teams prioritize technologies and strategies that mitigate peak load, if at all?
- What are design teams' motivations for participating in the product?
- What are customers' perceived motivations for participating in the Product?
- Are customers aware of energy code changes?
- Are customers aware of the impact rising baselines may have on savings achieved and rebate amounts available?
- How do changes in above code savings impact trade ally and customer ability to participate in the Product? Do design teams perceive more stringent energy codes to be a barrier to participation in the Product?
- Does the program influence the underlying structure and functioning of the market?

Table 12 presents the link between each evaluation objective, research question, and survey question.

Table 12. Evaluation Objective, Research Question, and Interview Guide Crosswalk

Evaluation Objective	Research Question	Interview Question Number(s)
Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.	What are design teams' motivations for participating in the product? What are customers' perceived motivations for participating in the Product?	Section C, Section D
Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.	What aspects of the programs are easy / challenging for design teams? How well are the Product's processes working for design teams?	Section E, Section I
Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.	Are customers aware of energy code changes? Are customers aware of the impact rising baselines may have on savings achieved and rebate amounts available? How do changes in above code savings impact trade ally and customer ability to participate in the Product?	G7c, G7d
Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).	What are design teams' perceptions of energy-related initiatives such as electrification and electric vehicle (EV) and infrastructure readiness?	G2 – G6
Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.	Do design teams perceive more stringent energy codes to be a barrier to participation in the Product?	G7

Evaluation Objective	Research Question	Interview Question Number(s)
Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.	How do design teams prioritize technologies and strategies that mitigate peak load, if at all?	E7, E7a
Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components), including identifying major drivers of free-ridership and assessing market effects of the Product.	Does the program influence the underlying structure and functioning of the market?	Section H

Interview Instructions

This guide is designed to apply to a wide range of potential respondents. As such, the questions are written deliberately to be open-ended and flexible. The questions should be understood as concepts to explore rather than a verbatim script. In particular, the bulleted follow-up questions should be considered possibilities to probe further, but may not apply to all respondents.

Interview

Section A: Screener/Background Information

Thank you for agreeing to talk with me today. TRC is an independent third-party contractor hired by Xcel Energy to evaluate their New Construction Program. I expect this conversation to take about 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.

Do you have any questions before I start?

First, I want to take 5 minutes to better understand your role and set the stage for the rest of the questions.

A1. Our records show [COMPANY NAME] has been involved in a project that participated in the Xcel Energy Colorado New Construction Program, is this correct? [Provide details as appropriate from data about interviewee]

IF NO: MARK AS NON-PARTICIPANT AND END CALL.

IF YES: Were you personally involved in the project(s)?

IF YES: MARK AS PARTICIPANT.

IF NO: ASK TO SPEAK TO SOMEONE AT THE FIRM WHO HAS BEEN INVOLVED.

A2. What is your title or role at [COMPANY NAME]?

PROBE: Designer, Developer, Engineer, Contractor, Project Manager, etc.

A3. What are your primary responsibilities at [COMPANY NAME]?

A4. Can you briefly describe your company's work as it related to energy efficiency and building energy performance?

A5. Has this changed over time?

A5a. **IF YES:** Did the Xcel Energy New Construction Program have anything to do with this change?

A6. Do you have experience with other utility energy efficiency products?

[IF YES]

A6a. How are projects you complete with other utilities different from those you do in Xcel Energy service territory?

A7. When did your company first start working with the Xcel Energy New Construction Program?

Section B: Role in the Product

B1. Has your company participated in the Energy Design Assistance (EDA) component of the New Construction program, the Energy Efficiency Buildings (EEB) component of the New Construction program, or both?

[IF B1 = BOTH]

B2. How does your company decide which program (EDA or EEB) to participate in?

[PROBE] What main factors go into your decision (e.g., building size, location, type, etc.)?

[IF NOT MENTIONED] Are there certain benefits specific to participating in the EDA program? What about the EEB program?

B2a. Is there a program that you prefer to use? Why?

[IF B1 = EDA or BOTH]

B3. What work did you complete as part of the project(s) that participated in the EDA Program?

PROBE: participated in introductory meeting, reviewed final energy analysis with customers, making efficiency recommendations, provide supporting documentation, etc.

B3a. Does the work differ across projects in the EDA program?

[IF B1 = EDA or BOTH]

B4. Has your company's participation in EDA increased, decreased, or stayed the same over time?

B4a. **IF INCREASE/ DECREASE**: What has caused your involvement to change?

[IF NOT MENTIONED] How do you envision your involvement in the future?

[IF B1 = EEB or BOTH]

B5. What work did you complete as part of the project (s) that participated in Xcel Energy's Energy Efficiency Buildings (EEB) program?

B5a. In general, what types of efficient equipment was installed due to program participation?

Section C: Trade Partners' Motivations/Barriers to Participate

C1. What are the reasons you participate in the New Construction Program?

[IF B1 = BOTH]

C1a. How do these reasons differ across components, if at all?

C2. What challenges did you face, if any, to participating in the New Construction program?

[IF B1 = BOTH]

C2a. Are there any challenges that are unique to the EDA or EEB? [IF YES] What are these challenges?

Section D: Trade Partners' Perspective on Customers Barriers

D1. In your opinion, why do clients include energy efficient equipment in their buildings?

PROBE: energy cost savings, marketing, green building certification, etc.

D2. What challenges do clients face when choosing energy-efficient equipment for their building, if anything?

PROBE: up-front costs, limited knowledge about energy efficient equipment, time, etc.

D3. In your opinion, why do clients participate in the New Construction program?

PROBE: incentive payments, help identifying energy saving measures, help with certification paperwork etc.

[IF B1 = BOTH]

D3a. How do these decisions differ across components (EDA vs EEB), if at all?

C3. Do you work on any construction projects without participating in the New Construction Program?

C3a. **[IF C3=YES]** What causes you to not participate?

C3b. **[IF C3=YES]** What if anything would make you more likely to participate?

[IF D5 > 0]

D5a. We are currently conducting non-participant research with customers that recently completed a new construction project but did not participate in the Xcel Energy New Construction program. Do you have any clients that may be interested in speaking with us?

Would you be willing to provide any contact information?

[IF YES]

Great, thank you. We'll collect that contact information at the end of the interview.

D4. Have you ever worked with a client who wanted to participate in the New Construction Program, but attempted to do so too late in their design process to participate?

D4a. **[IF D4=YES]** Why did they not attempt to participate earlier in their design process?

D4b. **[IF D4=YES]** What could Xcel Energy do to help enroll these projects earlier?

D5. What proportion of your clients do not participate in the New Construction program, but build energy efficient buildings that would qualify?

D6. Do clients ever consider installing greater quantities or types of higher-saving energy efficient equipment than they actually install?

D6a. What are the reasons clients **[IF D6 = YES]** install fewer or lower-energy saving equipment / **[IF D6 = NO]** may consider installing fewer or lower energy saving equipment?

PROBE: Tried to integrate equipment too late in process?

Short building time line prioritized speed?

Removed during the value engineering process **[PROBE ALL IF NOT MENTIONED]**

Up-front cost too high?

Avoiding equipment they are not experienced with?

D6. Under what circumstances do you think clients would install more energy efficient equipment, or equipment that created larger amounts of energy savings?

PROBE: More knowledge of EE options?

More familiar with successful implementation of EE equipment?

Lower up-front costs?

Greater energy savings?

Less rushed construction schedules?

If client paid utility bills (i.e., no split incentive)?

Future tenant/owner expressed interest in EE?

D7. Do clients have ideas about what energy efficient equipment they want to install before the introductory meetings?

D7a. **[IF D7=YES]** What energy efficiency equipment is most commonly considered?

D7b. **[IF D7=YES]** Is this the equipment they wind up selecting for installation in the final design?

D7c. **[IF D7b indicates clients select different equipment]** Are clients' final equipment selections more or less energy efficient than their original selections?

D7d. **[IF D7b indicates clients select different equipment]** For what reasons do clients select equipment that is different from what they were initially considering?

PROBE for <u>influence of modeling,</u> energy/strategy analysis, or consultant recommendations on final customer measure choices

D8. Are there types of clients that seem interested in projects that yield high-levels of energy savings?

D8a. **[IF D8=YES]** Which types of clients? Are they typically of a certain type of building or ownership structure?

D9. Do you ever recommend measures that would yield high levels of energy savings, but that might be more complicated to install or operate, or involve higher up-front costs? Why or why not?

D9a. When presenting these recommendations, how perceptive are customers to an energy efficiency framing? What about future return on investment or cost savings?

D10. What would cause you to complete more projects via the Xcel Energy New Construction Program, if anything?

D11. What would cause you to complete projects with higher amounts of energy savings via the Xcel Energy New Construction Program, if anything?

Section H: Free ridership

H1. For this next question I'm asking you to rate the importance of the Xcel Energy New Construction Program on your decision to recommend energy efficiency measures. On a scale of 0 to 10 where 0 is NOT AT ALL IMPORTANT and 10 is EXTREMELY IMPORTANT, how important was the Xcel Energy New Construction Program, **including incentives as well as product services and information**, in influencing your decision to recommend that CUSTOMER install the energy efficient equipment they did?

H2. How important was your firm's past participation in the New Construction Program in recommending that CUSTOMER install this energy efficient equipment?

H3. Using a 0 to 10 likelihood scale where 0 is NOT AT ALL LIKELY and 10 is EXTREMELY LIKELY, if the Xcel Energy New Construction Program, **including incentives as well as product services and information,** had not been available, what is the likelihood that you would have recommended installing the same energy efficiency measures?

H3a. In what percent of projects do you recommend integrating energy efficient design features?

H3b. Thinking only about these projects in which you recommend energy efficient design features, about what percent of these projects do you complete through the Xcel Energy New Construction Program?

H3c. For those projects you complete through the Xcel Energy New Construction Program, do you recommend specific energy efficient equipment before the introductory meeting?

H3d. **[IF H3c=YES]** Why do you make recommendations at this stage of the design process?

PROBE: Standard practice in industry to make initial recommendations?

Experience with customer preferences indicates preferred measures?

Previous experience with recommended equipment via product?

H3e. **[IF H3c=YES]** Are the measures you recommend prior to the introductory meeting the ones the client winds up installing?

H3f. **[IF H3e=NO]** What causes them to select alternative measures?

H3g. **[IF H3e=NO]** Does the design review meeting cause them to select alternatives? In what ways does it have this impact?

****

Consistency check

[Ask If (H1 > 7 AND H3 >6 i.e., *Product was important AND would have recommended without product*) else skip to E1]

H4. You just gave <H1 RESPONSE> points to the importance of the product in your decision to recommend that CUSTOMER install the energy efficient equipment they did. I would interpret that to mean that the product was quite important to your decision to recommend equipment. Later, when I asked about what you would have done in the absence of the product I recorded some answers that would imply that the product was not that important to you. Just to make sure I have recorded this properly, I have a couple of questions to ask you.

H4a. When I asked you about the importance of the Product, including incentives and services, you gave a rating of ...<H1 RESPONSE> ... out of ten, indicating that the product and the incentives were important to you. Can you tell me why the product was important?

H4b. When I asked you about the likelihood you would have recommended installing these energy efficiency features without the product, you gave a rating of ...<H3 RESPONSE> ... out of ten, indicating that the product was not that important to you in that you would have recommended the measure anyway. Can you tell me why the product was not that important?

[IF HAVE NOT MENTIONED VALUE ENGINEERING]

H4c. What influence, if any, did the Product have on the value engineering process?

****

Section E: Product Interaction

We'd like to know how helpful different parts of the New Construction program are to you.

[IF B1 = EDA or BOTH]

E1. Could you describe the aspects of the Energy Design Assistance compenent that were most helpful to you?

E1a. What about aspects of the Energy Design Assistance component that were least helpful?

[IF B1 = EEB or BOTH]

E2. Could you describe the aspects of the Energy Efficiency Buildings compenent that were most helpful to you?

E2a. What about aspects of the Energy Efficient Buildings component that were least helpful?

E3. For the next set of questions, I'll read a list of different tasks associated with the program(s). Please rate each from 1 to 5, where 1 means that part of the product is not at all easy to complete, and 5 means that part of the product was extremely easy to complete.

E3a. Completing the program application

E3b. Meeting program deadlines

E3d. **[IF B1 = EDA or BOTH]** Getting in touch with energy consultants

E3e. **[IF B1 = EDA or BOTH]** Selecting energy efficiency opportunities that align with first cost, payback, and energy efficiency expectations

E3f. **[IF B1 = EDA or BOTH]** Meeting minimum savings requirements

E3g. **[IF B1 = EEB or BOTH]** Getting in touch with third party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant)

E3h. **[IF B1 = EEB or BOTH]** Selecting qualifying energy efficiency equipment

E4. What was the easiest task? Why?

E5. What was the most challenging task? Why?

E6. From the time work started to project completion, did the project take less or more time than you expected to complete? What factors impacted the timeline?

[if indicated they participated prior to 2019 in response to A7 AND B1 = EDA OR BOTH]

E7. How have changes to the EDA incentive structure impacted your customers expected total expected incentives, if at all?

[IF NEEDED] For the 2019/2020 product cycle, Xcel Energy adjusted the incentive structure for the EDA component, reducing the incentive for peak coincident demand to $250/kW down from $400/kW, and adjusting kWh rebates to reflect TOU rates. EDA is also increasingly prioritizing technologies and strategies that mitigate peak loads.

E7a. What strategies, if any, do you use to help customers prioritize technologies and strategies that mitigate peak loads?

Section G: Evolving Market Place

G1. What role does energy efficiency play in your decisions around building design and/or construction?

G1a. What is your overall perception of the importance clients' place on having energy efficiency as an important design and construction consideration?

G1b. How comfortable would you say you are making recommendations about energy efficient designs, systems, and equipment?

Probe: Is there anything that you find difficult to communicate to clients?

G1c. How comfortable are your clients in making energy efficiency decisions?

G2. What do you see as new / emerging energy efficiency opportunities for business new construction customers?

G2a. How do these emerging opportunities impact your recommendations to customers, if at all?

G2b. Do you ever recommend specific electrification technologies (e.g., heat pump, PV, induction cooktop)?

G2c. Do you ever recommend specific control technologies (e.g., controls that allow participation in programs that adjust loads to a utility-generated price signal?)

G3. What role do green building certifications (like LEED) play the in the construction market?

PROBE: How do these certifications affect building owners design choices? How does this vary across the markets you work in?

G3a. Has this changed over time? In what ways?

G3b. Has the number of buildings pursuing this type of certification changed over time?

G3c. Will the number of buildings pursuing this type of certification change in the future?

G4. Are you familiar with the term "electrification"?

[IF NO] Electrification refers to the shift from any non-electric source of energy to electricity at the point the energy is consumed.

G4a. [**IF YES**] What does it mean to your business and your interactions with clients?

G4c. Have you noticed a shift toward electrification in building design and construction?

[IF YES] How do you feel about the shift?

[IF NO] Do you predict this shift will occur?

G5d. Do you ever recommend customers pursue all electric buildings?

G5. To what extent does your business consider electric vehicle (EV) readiness in building design and construction?

G5a. How open are customers to the inclusion of EV chargers?

G6. Has the energy code been updated recently in the jurisdictions that you serve?

[IF G6 = YES]

G7. What impact do stringent energy codes have on new construction in your experience?

G7a. How have these changes to the energy code impacted the energy efficiency of your designs or the measures your recommend, if at all?

G7b. How have these changes to the energy code impacted your ability to participate in the New Construction program, if at all?

G7c. Are your customers aware of these changes to the energy code?

G7d. How do you communicate how these changes might impact their expected rebate, if at all? Is there anything that Xcel Energy could do to assist you with this?

G7e. Do you feel that past participation in the New Construction Program has helped you adapt to more stringent codes? **PROBE:** did experience with above-code

performance incentivized by Xcel Energy familiarize you with technologies or practices that have become part of the energy code?

Section I: Satisfaction

Finally, I'd like to ask you a few more questions about your experience with the program.

[IF B1 = EDA]

I1. Thinking about your experience from start to finish, what did you like most about your experience with the EDA program as a whole?

[IF B1 = EEB]

I2. Thinking about your experience from start to finish, what did you like most about your experience with the EEB program as a whole?

[IF B1 = BOTH]

I3. Thinking about your experience from start to finish, what did you like most about your experience with the New Construction program as a whole? Did this differ at all between the EDA and EEB components?

I4. For this final section, I would like you to provide numerical ratings for various aspects of the programs. Please respond using a scale from 1 to 5, where 1 is extremely dissatisfied and 5 is extremely satisfied: If possible, please provide some context for your scores.

I4a. Your **overall satisfaction** with the Program?

I4b. The energy / strategy analysis to select a design alternative incorporating energy efficiency opportunities.

I4c. The consulting experience to determine energy efficient equipment / measures.

I4d. **[IF B1 = EDA]** The **modeling** completed for the project

I4e. The structure of the incentive (i.e., kWh savings aligned with time-of-use rates and peak coincident demand savings rebates).

I4f. The dollar amount of the rebate.

I4g. Your interactions with Xcel Energy Product staff.

I4h. **[IF B1 = EDA]** Your interactions with energy modelers.

I4i. **[IF B1 = EEB]** Your interactions with the third-party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant)

I5. What, if anything, would you change about the Xcel Energy New Construction Program to help you complete projects with higher levels of energy savings?

PROBE: bigger incentive, different modeling, changes to design team meetings, educating customers about energy efficiency, etc.

I6. What feedback have your customers given about their experiences with the Xcel Energy New Construction Program, if anything?

Section J: Closing

J1. Is there anything that we haven't discussed today that you feel that we should know about?

J2. Those are all the questions I have for you today. Do you have any questions for me, or anything else you would like to add?

J3. Great! Thank you so much for your time. We really appreciate your feedback. As a thank you for your time and valuable input we would like to send you a $50 Tango e-gift card. What is the best email address to send this e-gift card to?

[IF INTERVIEWEE ASKS ABOUT GIFT CARD] The $50 e-gift card is a Tango gift card whichh is a digital gift card that can be redeemed at a variety of retailers, including Amazon, Apple, and Target, among others. In the next two weeks we will send you a link to redeem your gift card on the Tango website.

[COLLECT CONTACT INFORMATION IF AGREED TO SHARE CUSTOMER INFORMATION]

B.5 Peer Utility Benchmarking Interview Guide

Introduction

To support the process and impact evaluation of the 2021 Xcel Energy 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 allowed 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 interview guide for the Colorado Commercial & Industrial New Construction Product peer utilities interviews. Interviews were conducted with 5 of Xcel

Energy's peer utilities detailed in Table 13 below. Target respondents were managers of commercial and industrial new construction programs.

Table 13: List of Peer Utilities

Utility	Program Name
Arizona Public Service Electric (APS)	Business Whole Building Program
NV Energy	New Construction Program
National Grid Massachusetts	Commercial New Construction and Major Renovations Program
Consumers Energy	New Construction for Business Program
Austin Energy	New Construction Rebates
Potomac Edison	Commercial New Construction
MidAmerican Illinois	Commercial New Construction

Table 14 shows the objectives for the overall evaluation and indicates which of these objectives was addressed by the peer utility interviews.

Table 14. Evaluation Objectives

Evaluation Objective	Impact or Process Objective	Research Activity	Benchmarking Interview Objective
Understand what motivates commercial and industrial (C&I) customers and building design teams to participate in the product.	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews	
Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and to identify what they would like to see included in the product.	Process	Participating customer survey, trade partner interviews	

Evaluation Objective	Impact or Process Objective	Research Activity	Benchmarking Interview Objective
Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, percent better-than-code savings achieved, and rebate amounts.	Process	Participating customer survey, trade partner interviews, benchmarking interviews	✓
Identify where members of the building community (e.g., customers, builders, modelers) are in their own energy transformation journey in order to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle (EV) and infrastructure readiness).	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews	
Understand the extent to which increasingly stringent code adoption and rising baselines serve as a barrier to participation among customers.	Process	Participating customer survey, nonparticipating customer survey, trade partner interviews, benchmarking interviews	✓
Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals.	Process	Trade partner interviews, benchmarking interviews	✓
Determine NTG ratio for EDA and EEB component incentives (i.e., one NTG ratio for both components).	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	✓
Identify major drivers of free ridership.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	

Evaluation Objective	Impact or Process Objective	Research Activity	Benchmarking Interview Objective
Assess participating and nonparticipating customer spillover.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	
Assess market effects of the Colorado New Construction Product.	Impact	Participating customer survey, participating customer interviews, nonparticipating customer interviews, trade partner interviews	

Table 15 identifies the interview questions related to each key performance indicator.

Table 15: Mapping of interview questions to indicators

Key Performance Indicator	Data Needed	Interview Question
Program energy savings goals	2020 program energy savings goals (MWh) 2020 program's savings (MWh) 2020 total energy efficiency portfolio goal (MWh)	B2, B3, B4
Program budget cost of acquisition (e.g. $/MWh, $/Mcf)	2020 program budget 2020 total gross energy savings for each peer program	B5
Customer Participation Levels	Number of projects completed in 2020	B1
Net-to-gross ratios (NTGRs)	NTG methods	B3
Total resource cost test (TRC) values	TRC values	B7

Table 16 identifies the interview questions related to each contextual theme.

Table 16: Mapping of interview questions to contextual themes

Contextual themes	Data Needed	Interview Question
Program description	Overall program objectives, implementation strategies, customer types targeted for participation Program staffing, the length of time of program operation, any recent changes that have been made to the program, and future outlook. Future program changes, including related to electrification, more stringent energy codes, etc.	A1, A2, C1
Program requirements	Building size requirements, screening projects into tracks Screening projects into program tracks How program offerings vary by size, building type	A4
Net-to-gross (NTG) savings approach	NTG method, ratio applied, calculation details	B3
Customer engagement practices	Methods used to engage customers Coordination across energy efficiency programs	C1
Trade partner engagement practices	Methods to engage trade partners Impact of recommendations on participation and savings	D1, D2
Measure types and incentives	List of measures and their efficiency levels, incentive levels	A3
Program marketing practices	Methods used to increase program awareness to new and existing customers	C1

Interview

Introduction/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 for Commercial & Industrial New Construction energy efficiency programs. As part of this study, we are reaching out to leaders of Commercial & Industrial New Construction programs to learn about innovative programs and best practices in the field.

We would like to include UTILITY in this study, as your Commercial & Industrial New Construction program has been identified as an [innovative/peer] program. In your interview, we would talk about your Commercial & Industrial New Construction program's design and implementation, as well as its successes and challenges. We would be very happy to share an anonymized version of our report on peer Commercial & Industrial New Construction programs 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?

a. Yes **[RECORD CONTACT INFORMATION; SETUP INTERVIEW TIME; EMAIL INTERVIEW TOPICS]**
b. No **[DISCUSS CONCERNS; ANSWER QUESTIONS; ATTEMPT TO CONVERT TO "YES"]**

SECTION A: KPIS/PROGRAM DESIGN

A1. First, we'd like to talk through the basic design and organization of your program. **[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH ON PROGRAM]**

Can you describe your program at a high level?

a. [If not known] Do you include new construction, major renovations, and additions?

   i. [If renovations and if not known] Do you have specific definition of size of the renovation to participate?

b. What are the program's overall objectives?

c. [If not known/confirm] Do buildings have to be over a certain size to participate in the program?

d. Do you accept any building type?

e. [If not known/confirm] Do projects have to obtain a minimum percent savings?

f. How do you track project applications and progress?

i. Do you anticipate changes to how you track projects in the future?

g. What tools do you use to document energy savings?

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

i. What will the program be like in the near future?

j. How is the program incorporating or addressing electrification initiatives in your jurisdiction (if at all)?

k. How is the program addressing rising baselines due to more stringent energy codes (if at all)?

i. Do you anticipate any future changes in anticipation of more stringent energy codes?
ii. Have customers and/or account representatives expressed concerns related to rising baselines due to more stringent energy codes?
iii. [IF YES] How do you plan to address these concerns, if at all?

A2. Can you describe the implementation strategies used by staff or implementers?

a. Do you offer technical assistance?

b. What types of measures do you offer?

A3. [IF THEY OFFER ENERGY MODELING] Can you please describe your energy modeling?

a. What software do you/your consultants use?

A4. Does the program have multiple "tracks" such as an offering for smaller buildings and another for larger buildings?

a. [IF YES] How do the program offerings differ by track?

b. [IF YES] Do you offer whole building modeling for smaller projects? If yes, do you find it to be cost-effective? How?

c. [IF YES] How does your program screen buildings into each track? (e.g., square footage, complexity of project)

A5. 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. Does the program offer incentive payments for any other specific activities? (e.g., attending design meetings, enrollment early In the design phase)

b. Do you offer any early design incentives, like design charrettes?

c. Can you recommend a web page or other resource where I can find a list of you're your program structure and incentive values?

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

Section B: Savings goals/cost

Next, I'd like to talk about the participation and energy savings achieved through the program in 2020.
[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH. CAN ASK QUESTIONS BELOW OR ASK RESPONDENT IF OK TO FOLLOW UP VIA EMAIL]

B1. How many projects were completed in 2020?

B2. What were the program's energy savings goals in 2020? (MWh)?

B3. 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?

B4. How much net/gross energy savings did the program report in 2020?

B5. What was the total energy efficiency portfolio goal in 2020?

B6. 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?

B7. What type of cost effectiveness test is applied to the program?

a. If Total Resource Cost (TRC), what was the TRC in 2020?

Section C: Program Participation

Next, I'd like to talk about how your program engages customers and trade partners.
[ASK/CONFIRM BASED ON HOLES IN BACKGROUND RESEARCH ON PROGRAM]

C1. How does the program engage potential program participants? [**NOTE:** confirm definition of participants and note that will have questions about design team professionals later on].

Probe as needed: 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/your implementer identify specific buildings/opportunities to target for recruitment? (e.g., certain types or sizes of buildings)

a. How do you identify those opportunities?

b. How do you recruit these specific individuals to participate?

d. Do you follow up with customers after a project is complete to facilitate participation in other energy efficiency programs?

a. [IF NO] Do you coordinate with other energy efficiency or energy related programs in some other way?

C2. Are there any projects or buildings that you don't allow to enroll in the program? If yes, why? (cost effectiveness, too little savings, too late in the design, etc.)

C3. Do you/your implementer recommend measures to participants?

a. Why/why not?

b. [IF YES] How do you decide what measures to recommend?

c. [IF YES] How do you present recommendations to participants? (e.g., a report, a meeting, through their design team, etc.)

d. [IF YES] What information is presented about recommendations? (e.g., savings, cost, ROI)

e. [IF YES] How do participants respond to these recommendations?

f. [IF YES] Are there any types of measures that participants are particularly responsive to?

C4. What do you think is the most effective method for getting a participant to choose a package of measures that yields a high amount of energy savings?

a. Does this method differ across participant type (e.g., building size, building type)?

Section D: Program Participation - Trade Partners

D1. Next, I'd like to talk about the program's trade partners.

a. What types of professionals do you work with (e.g., architects, design engineers)?

b. What Is the relationship between these trade partners and the program?

Probes: Registered trade partners?
Open participation?

c. In what ways do trade partners interact with or support the program?

Probes: Complete customer paperwork? Attend design meetings?

d. What activities do program staff conduct to encourage trade partners to participate?

a. Does the program offer trade partner incentives?

b. Do incentive payments to trade partners scale with the energy savings of the project?

c. Does the program offer things besides incentive payments to encourage trade partners to participate?

i. Training? Marketing assistance? Awards?

D2. What role do trade partners play in driving customer participation in the program?

a. Do trade partners recommend measures to customers? Is this part of the programs design? [IF YES] How satisfied are you with the measures trade partners recommend?

Section E: Closing

E1. Great! Thank you so much for your time. Those are all the questions we have for you today. Before we finish, do you have any questions for me, or anything else you would like to add?

Appendix C: Data Collection Findings

Appendic C includes the following:

- C.1 Staff Interview Findings
- C.2 Participating Customer Survey Findings
- C.3 Nonparticipating Trade Partner Interview Findings
- C.4 Trade Partner Interview Findings
- C.5 Peer Utility Interview Findings

C.1 Staff Interview Findings

Introduction

To support the process and impact evaluation of the 2021 Xcel Energy DSM products, the TRC Companies (TRC) evaluation team conducted telephone interviews with key staff managing and implementing the Xcel Energy DSM products. 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 Colorado Commercial and Industrial (C&I) New Construction (NCx) product.

Xcel Energy Staff:

- Product Manager
- Strategic Segment Team Lead
- Product Engineers
- Account Manager

This memo contains our summary of the key takeaways, a description of the product, an inventory of the product's strengths and barriers, and feedback on evaluation priorities.

Key Takeaways

Below are key takeaways from staff experiences with the Colorado C&I NCx product. These key takeaways provide a summary of the product context and feedback received during both the kick-off meeting and the subsequent staff interviews.

- **The product is experiencing success in recent years, in terms of cost-effectiveness, net benefits, and energy savings.** This success has extended to the portfolio level; the product helped to shore up the overall C&I portfolio from a savings perspective in 2020.
- **Staff interviewees noted that the product has had success re-aligning incentives to focus on peak demand and time-of-use (TOU).** Product staff noted that energy consultants and customers are increasingly aware that "every kWh saved is not worth the same value" from Xcel Energy's perspective. Continuing to promote a shift towards

savings that have the highest value for the overall system, and controllability of new building loads, will be important in supporting Xcel Energy's overall corporate goals.

- **Staff interviewee responses indicated an interest in supporting jurisdictions in their goals, including electrification and energy code compliance and adoption.** However, achieving these goals may be more challenging for C&I customers.

Product Activities, Goals, and Resources

The following bullets present the evaluation team's understanding of the product based on staff interview results and a review of available product documentation.

Goals and Objectives

- The product's goals track key performance indicators of gas and electric savings and participation. The savings goals are based on surpassing standards from energy codes. Table 17 below shows the 2019 and 2020 savings goals and 2020 actuals.

Table 17. Xcel Energy Colorado C&I New Construction Energy Savings Goals & Actuals

	kW	kWh	Electric Participants	Budget/ Spend	Dth	Gas Participants	Budget/ Spend
2019 Goals	11,436	39,338,167	104	$11,511,392	79,558	60	$650,300
2020 Goals	12,721	43,897,225	96	$12,733,572	51,627	60	$506,817
2020 Actuals	19,032	62,246,967	484	$14,120,154	140,219	296	$1,013,844

Note: This is the population of participating customers who received rebates between January 2020 and December 2020. These numbers are based on aggregated data provided to TRC in March 2021, with some modifications based on product manager feedback.

- A primary focus of the product is to assist participating customers in constructing energy efficient buildings in a way that is cost-effective, from both the customer and Xcel Energy perspective, and achieves savings goals.
  - In recent years, product staff have worked to increase product cost effectiveness through changes to incentives as well as working with energy consultants on the importance of accurately estimating costs and savings, including incremental capital costs, and operations and maintenance (O&M) and water savings.
  - Incentive changes included decreasing rebate amounts and consultant payments, while changing the incentive structure to be more time variable.
- Re-aligning incentives to focus on the importance of TOU and demand savings has become a recent program goal. One interviewee underscored the importance of this, explaining that "every kWh saved is not worth the same value." This interviewee noted that educating product energy modelers and builders is imperative to reducing Xcel Energy's grid load and total energy generation – as well as reducing energy costs – for all Xcel Energy customers.

- Non-energy goals include increasing customer participation and satisfaction. One interviewee highlighted the importance of customer satisfaction in growing the program and building relationships with the building community, noting that in recent years the participation process has been streamlined to improve customer experience.
- Broader, long-term goals include supporting jurisdictions in their goals, such as Denver's electrification goals and zero-net energy policies.

Activities

- In 2020, the product included two primary components[10] to allow building owners of different areas and sizes to participate:
  - The Energy Design Assistance (EDA) component is more comprehensive; it engages participants early in the design process and uses integrated design modeling, targeting larger buildings (square footage greater than 50,000 sqft). In 2020, the EDA component included three tracks: basic, enhanced, and express.
  - The Energy Efficient Buildings (EEB) component is intended to provide a more simplified approach. This component targets smaller buildings (a minimum of 10,000 sqft and generally less than 70,000 sqft). Projects are typically not well suited for full-scale energy modeling, and are engaged later in the design process (typically after the schematic design phase). However, any project above 10,000 sqft can participate in this component.

The following sections describe the two primary components (EDA and EEB) as well as marketing-specific activities in more detail.

Energy Design Assistance

The high-level participation process for the EDA component is outlined in Figure 3. Additional details are provided below.

Figure 3: High-Level EDA Participation Process.

- Xcel Energy works with a number of pre-approved, independent energy consultants to implement the EDA product. Energy consultants primarily interface with building owners and design teams.
- Customers first submit an application, which is reviewed by Xcel Energy to confirm project eligibility for product participation.
- Once an application is approved, the customer, their design team, account representative, energy consultant and others meet to discuss the product participation process, customer goals for the building, expected results and initial project details.

[10] In September 2019, the product began offering a third component, New Construction Lighting. This is similar to other prescriptive products in that customers may apply for rebates by submitting a lighting ComCheck and providing a detailed invoice of installed equipment. This component was a small part of the product in 2020 and was not a focus of staff interviews.

- After this initial introductory meeting, the energy consultant completes a preliminary analysis and energy simulation, exploring different energy efficiency opportunities that align with the customer's first cost, payback and energy efficiency expectations, as well as design strategy and intent. Once complete, the energy consultant submits the preliminary analysis to Xcel Energy for review and approval. Product engineers interface with energy consultants to suggest strategies to improve analyses as needed.
- Energy consultants then complete a final energy/strategy analysis which packages together design alternatives showing building energy savings, budget, payback periods and incentives for each alternative. Customers and their design teams then choose the approach that best fits their needs. Afterwords, the energy consultant submits the final energy analysis to Xcel Energy for review and approval. Product engineers interface with energy consultants to suggest strategies to improve analyses as needed.
- Later in the design process, energy consultants review construction documents and adjust the project energy model as needed. Models are then used to determine expected project incentives and submitted to Xcel Energy for review and approval.
- After construction completion, the energy consultant completes onsite verification of the energy model, comparing the actual result to estimated savings, and determining the final rebate. The measurement and verification report is then submitted to Xcel Energy for final review, approval, and processing of incentives.
- The product offers performance incentives based on actual energy savings; rebates are $250 per kW saved for peak savings, and range from $0.021 to $0.084 per kWh based on the time of day savings occur, and $4 per Dth saved. Additionally, Xcel Energy offers a design team incentive, ranging from $8,000 to $12,000 per project.

Energy efficient buildings

The high-level participation process for the EEB component is outlined in Figure 4. Additional details are provided below.

Figure 4. High-Level EEB Participation Process

- Xcel Energy contracts with Nexant to implement the EEB product. Implementer staff interface primarily with building owners and architecture/engineering firms.
- Customers first submit an application, which is reviewed by Xcel Energy to confirm eligibility for product participation. If eligibility is confirmed, Xcel Energy will request project documentation including construction documents, submittals and/or equipment specifications
- Once the application is approved, building owners and their design teams meet with Nexant to discuss the product and customer goals for the building, review building plans, identify energy efficiency opportunities and determine the project's rebate potential.
- Xcel Energy engineers work with Nexant to review projects and assist with energy efficient measure suggestion.

- Building owners must notify Nexant at least two months prior to project completion to schedule verification. Nexant then completes onsite verification and updates rebate amounts based on actual installed equipment. Nexant submits this verification to Xcel Energy; Xcel Energy completes the rebates and sends it to customers within 4 to 6 weeks.

Marketing-Specific Activities

- For EEB, the product primarily relies on outreach on the part of the Xcel Energy account representatives and the Business Solutions Center to market the product.
- For EDA, product staff rely on external energy consultants and modelers to market the product.
- Xcel Energy's product website also includes case studies for both the EDA and EEB components.

Resources

Product staff rely on the following resources to implement both EEB and EDA components of the product:

- Salesforce – an integral tool for tracking product data. For EDA, Salesforce is used at the end of a project to track final data. For EEB, Salesforce is used throughout the project life-cycle.
- Sales channels – Xcel Energy account managers and Xcel Energy's Business Solutions Center are the primary point of contact for customers for this product.
- Other Xcel Energy spreadsheets and tools – Developed by product staff to enhance customer experience and increase potential energy savings. These include:
  - Additional product tracking spreadsheets, including a net benefits tracker.
  - A python script developed as a quality control tool. This tool gathers data from tracking tools including EDAPT and Salesforce and assists in identifying outliers (i.e., projects with unexpected savings).

The following sections describe resources that are specific to either the EDA or EEB component.

Energy Design Assistance

- Energy Design Assitance Program Tracker (EDAPT) – An integral tool for tracking product data throughout the project life-cyle. EDAPT was developed by the National Renewable Energy Lab (NREL). NREL will continue to host this tool through October 2022, after which Xcel Energy will need to use a new tool for tracking product data if a third party does not take over this resource.
  - EDAPT Website – Includes additional resources for participants including a process diagram for the product, information sheets, modeling protocols, and other tools and templates for vendors.
- Energy Consultants – A key resource for the EDA component of the product given their modeling expertise.

Energy Efficient Buildings

- Nexant – A key resource for the EEB component of the product given their building science expertise.

Product Strengths and Challenges

During interviews, staff identified the following strengths and challenges to implementing the Colorado C&I NCx product in 2020. Strengths include factors that product staff identified as supporting the success of the product; challenges include factors that product staff identified as preventing the product from reaching its goals. As the core long-term goals continually shape the product, there is natural overlap between strengths and challenges.

Strengths

- Product staff acknowledged that the energy modelers are a core strength of the product; the product has been able to achieve this while supporting the modeling community through an open process.
  - Product staff reported that energy modelers increasingly understand the importance of aligning recommendations with TOU considerations to help promote grid reliability and reduce total energy consumption.
- One interviewee highlighted the streamlined participation process that the product provides for builders as a key program strength. This interviewee noted that customers appreciate the support received from product staff and consultants, and the ability to receive a single rebate check.
- Several product staff discussed the flexibility of the product as a key strength. This flexibility includes the opportunity to engage in one of two components (EDA or EEB) depending on building size and phase in the design process. Additionally, product staff and energy consultants are skilled at adapting energy efficiency suggestions to accommodate budget considerations and other customer needs in a way that maximizes savings.
- Product staff noted that both EDA and EEB had success in achieving their savings goals in 2020. One interviewee stated that product staff have done a good job in recent years of focusing on net benefit intensity and driving portfolio value from an energy perspective. In part because of these changes, the product has become a net benefit driver at the portfolio level, and helped to shore up the C&I portfolio from a savings perspective in 2020. Notably, due in part to the long lead time/pipeline for projects, the product did not see any significant impacts due to the COVID-19 pandemic.

Challenges

- Energy codes vary by jurisdiction in Colorado given that it is a “home rule” state. Product staff expressed that this creates challenges for all involved. The patchwork of codes in Colorado can make communicating the benefits of building above code difficult, especially with concerns for cost-effectiveness and increasingly stringent codes. Additionally, it can be difficult to identify above code savings as baselines increase and technical potential decreases.
- One interviewee discussed the need to allow additional energy consultants to participate in the product in the near future as a potential challenge. Similarly, another interviewee

discussed finding more great energy modelers as both a challenge and an opportunity to expand the product into additional areas of the market.

- One interviewee discussed coordination challenges between product staff and other Xcel Energy departments and staff, such as account representatives. This interviewee described instances where customers who apply to participate in the product are assigned to an account representative that differs from the representative with whom they have an established relationship.

Feedback on Evaluation Priorities

During interviews, staff identified research topics they would like the evaluation to address. The following bullets compile these topics along with additional topics that the evaluation team identified based on staff interview findings. The evaluation team will consider these research topics when prioritizing portfolio-wide evaluation needs and as able, incorporate them into the final evaluation plan for the 2020 Colorado C&I NCx product.

- Identify possible program design changes needed given increasingly stringent energy codes and rising baselines. This could include:
  - Identifying differences across building types that could guide Xcel Energy toward greater savings and more impactful practices.
  - Evaluating the criteria used to determine whether a project is more appropriate for EDA or EEB.
  - Identifying gaps in customer expectations in terms of percent better-than-code and rebate amounts.
- Identify the potential for future coordination with other Xcel Energy departments and products. This could include:
  - Identifying opportunities to improve coordination with account representatives and other customer facing staff.

Exploring customer interest in and understanding of jurisdictional goals, such as electrification and electric vehicle (EV) and infrastructure readiness, and identifying where members of the building community (customers, builders, modelers) are in their own energy transformation journey.

C.2 Participating Customer Survey Findings

Survey

Section A: Firmographics, Operations, Participation

First, I'd like to gather some information about your involvement with the Xcel Energy **<PROGRAM>** program and your role at your organization.

[ASK ALL]

A1. What is your occupational title within your company?

	Count	Valid Percent
Facilities / Building manager	3	25%
Energy manager	2	17%
Other financial / Administrative position	1	8%
General manager	1	8%
Operations	1	8%
Supervising Chief Engineer	1	8%
Project manager	2	8%
Community Manager	1	8%
Total	**12**	**100%**

[ASK ALL]

A2. Has your organization previously participated in any other Xcel Energy energy efficiency program before 2020?

	Count	Valid Percent
Yes	5	42%
No	7	58%
Total	**12**	**100%**

[ASK ALL]

A3. Given your knowledge of other Xcel Energy energy programs (whether as a participant or otherwise), do you see an opportunity for the **<PROGRAM>** program to work with these other programs?

[READ ONE AT A TIME]

A3a. Other energy efficiency programs

	Count	Valid Percent
Yes	11	92%
No	0	0%
Don't know	1	8%
Total	**12**	**100%**

A3b. Renewable programs

	Count	Valid Percent
Yes	11	92%
No	0	0%
Don't know	1	8%
Total	**12**	**100%**

A3c. Electric Vehicle programs

	Count	Valid Percent
Yes	11	92%
No	0	0%
Don't know	1	8%
Total	**12**	**100%**

Section B: Awareness and Electrification Perceptions

[ASK ALL]

B1. How did you first become aware of Xcel Energy rebates for the **<PROGRAM>** program?

[DO NOT READ ALL THE BELOW; Code responses and use to clarify/probe if needed].

	Count	Valid Percent
Xcel Energy program staff	3	25%
Xcel Energy Account Manager or Business Solutions Center staff	3	25%
Design team professional	1	8%
Another business or other word of mouth	2	17%
Non-Xcel Energy Consultant	3	25%
Total	**12**	**100%**

[ASK ALL]

B2. Are you familiar with the term "electrification?"

	Count	Valid Percent
Yes, very familiar	4	33%
Yes, somewhat familiar	5	42%

No, not at all familiar	3	25%
Total	**12**	**100%**

[If B2 = 1 or 2]

B2a. What does the term “electrification” mean to you?

Verbatim Response
A massive pain in the behind. Basically what it is, is we are pulling buildings and commercial properties off of gas and steam and making them electrified as to reduce stress on the dripping grid, supply lines and reducing our carbon footprints. Something that makes me very crumpy to try and sell them to building owners.
I believe what electrification means is utilizing as much motor loads and potential gas loads as possibly can and converting to electric loads instead of natural gas.
It means going electric. So building components and systems that might have operated or been powered with a different fuel source be powered with electricity. I have heard it called 'beneficial electrification'.
Moving from fossil fuel to renewable energy sources.
My sense is different alternatives electrificate different means of doing something.
Provide power to facility.
Providing power to the building.
That means shifting of buildings operations from using fossil fuel, such as natural gas to primarily using electricity for things like heating, cooling, water heating and cooking.

[IF B2=3 AND ASKED FOR DEFINITION] Electrification refers to the shift from any non-electric source of energy to electricity at the point where the energy is consumed.

[ASK IF B2 = 1 or 2]

B3. How would you describe your overall opinion of electrification, on a scale from 1 to 5, where 1 is “not at all favorable” and 5 is “very favorable”?

	Count	Valid Percent
1 – Not at all favorable	0	0%
2	0	0%
3	4	44%
4	1	11%
5 – Very favorable	4	44%
Total	**9**	**100%**

[If B2 = 1 or 2]

B3a. Why would you say you view electrification **<if numeric response to B3 = 1 is 1-2, "unfavorable"; if numeric response to B3 = 1 is 6-10, "favorable">**?

Verbatim Response
Because I believe in what they are doing and I am a supporter of it, I just don't like how it is coming along, how it is coming by.
I have a pretty good background in electric design and construction, and I think I understand it pretty well, but as far as implementing them in new buildings, there is still lots to learn.
While I think there are advantages of electrification, there are major technical challenges to making it feasible. The known electrical grid, to put everything in our society over to electrification poses challenges to transmission line, distribution line, utility service at the location of the consumer business or residential homes. Just the idea of putting cars to all electric vehicles is a major hurdle in a residential area, putting all cars on electric grid. It's difficult and high cost.
Because I think we should use less fossil fuels for the environment.
Basically it gives more input.
Because it is essential utility.
I don't really know what it means.
I guess for my organization, there are other opportunities to conserve energy or be more energy efficient that I think are more important than the electrification piece. Like, converting our lighting to LED.

[ASK ALL]

B4. Are you interested in learning more about electrification?

	Count	Valid Percent
Yes	11	92%
No	1	8%
Total	**12**	**100%**

Section C: Motivations

[ASK ALL]

C1. Next, please rate the importance of the following in terms of your decision to participate in the **<PROGRAM>** program, using a 1 to 5 scale where 1 is "not at all important" and 5 is "very important"? How important was…

1. Xcel Energy rebates

	Count	Valid Percent
1 – Not at all important	0	0%
2	0	0%
3	0	0%
4	4	33%
5 – Very important	8	67%
Total	**12**	**100%**

2. **[SHOW IF <COMPONENT> = 1 (i.e., EDA)]** The energy/strategy analysis and presentation of design alternatives

	Count	Valid Percent
1 – Not at all important	0	0%
2	0	0%
3	1	13%
4	5	63%
5 – Very important	2	25%
Total	**8**	**100%**

3. **[SHOW IF <COMPONENT> = 2 (i.e., EEB)]** The energy efficiency measure recommendations

	Count	Valid Percent
1 – Not at all important	0	0%
2	1	25%
3	0	0%
4	0	0%
5 – Very important	1	25%
Don’t know	1	25%
Skip	1	25%
Total	**4**	**100%**

4. Verification of energy savings

	Count	Valid Percent
1 – Not at all important	0	0%
2	2	17%
3	3	25%
4	2	17%
5 – Very important	4	33%
Don't know	1	8%
Total	**12**	**100%**

5. Reducing energy use

	Count	Valid Percent
1 – Not at all important	0	0%
2	0	0%
3	1	8%
4	4	33%
5 – Very important	7	58%
Don't know	0	0%
Total	**12**	**100%**

6. Reducing the dollar amount of your energy bill

	Count	Valid Percent
1 – Not at all important	0	0%
2	0	0%
3	1	8%
4	4	33%
5 – Very important	7	58%
Don't know	0	0%
Total	**12**	**100%**

7. Interactions with your Xcel Energy account manager or an Xcel Energy Business Solutions Center representative

	Count	Valid Percent
1 – Not at all important	1	8%
2	2	17%
3	2	17%
4	5	42%
5 – Very important	2	17%
Don't know	0	0%
Total	**12**	**100%**

[ASK ALL]

C1a. Was there any other factor that influenced your decision to participate?

	Count	Valid Percent
Yes	4	33%
No	8	67%
Total	**12**	**100%**

"Yes" Verbatim Response

Best Grant
Ethical values (it was the right thing to do)
Savings of money over time (payback)
The technical support of the program helped me tell the story to our construction team

[ASK IF C1a = 1]

C1b. How would you rate the importance of that factor in terms of your decision to participate in the <PROGRAM> program, using a 1 to 5 scale where 1 is "not at all important" and 5 is "very important"?

	Count	Valid Percent
1 – Not at all important	0	0%
2	0	0%
3	0	0%
4	1	25%
5 – Very important	3	75%

Total	**4**	**100%**

[ASK IF <COMPONENT> = 1 (i.e., EDA)]

C2. Did you learn about the **<COMPONENT>** component of the **<PROGRAM>** program before or after you first began to think about including energy efficient design features in this building?

	Count	Valid Percent
Before	3	38%
After	2	25%
Other	2	25%
Don't know	1	13%
Total	**8**	**100%**

"Other" Verbatim Response

Hand in hand; At the same time;

During

Section D: Free-ridership

[ASK ALL]

D0. In your own words, how would you describe the influence that the Xcel Energy **<PROGRAM>** had on your decision to include energy efficient features in the final design of the building at **<BUILDING ADDRESS>**?

Verbatim Response

They were a good partner. I think that's it.

I would say it was fairly important. We went through options to determine upfront costs, and cost savings over time, by using energy efficient items and then what kind of rebate we can get from them.

It was very influential in terms of both decision making criteria looking at the metrics included in the program, also some of key specifications were important.

It made it better, but was not the only major factor. We would have still built to be energy efficient without it, but it enabled us to do more.

We wanted input from Xcel. So very influential.

It was critical to making school building efficient

It somewhat guided us. We already build for efficiency, but could always build better.

Fairly influential. The energy savings and dollar savings played an important role in deciding what mechanical systems to go with.

In terms of importance on our decision, it was more about making sure our residents have a higher quality of living and things like that than for us being able to bill for rebates and help our residents know they are receiving energy efficiency as well.

It was pretty important.

It was probably important, gave us a basis to understand them.

[ASK ALL]

D1.

Next, I'm going to ask a few questions about your decision to include energy efficiency design features in this building. Please rate the importance of each of the following factors on your decision to install energy efficient equipment or systems using a scale from 0 to 10, where 0 means "not at all important" and 10 means "extremely important". The bigger the number, the greater the influence. If you don't know, just say "I don't know". Now, how important was…

(RANDOMIZE D1a-D1r, REPEAT SCALE AS NECESSARY)

D1a. The rebates offered by Xcel Energy

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	1	8%
4	0	0%
5	0	0%
6	0	0%
7	1	8%
8	5	42%
9	0	0%
10 – Extremely important	5	42%
Total	**12**	**100%**

D1b. An endorsement or recommendation by your Xcel Energy account manager or an Xcel Energy Business Solutions Center representative

	Count	Valid Percent
0 – Not at all important	1	8%
1	1	8%
2	1	8%
3	1	8%
4	0	0%
5	0	0%
6	2	17%
7	1	8%
8	2	17%
9	0	0%
10 – Extremely important	1	8%
Don't know	2	17%
Total	**12**	**100%**

D1c. An endorsement or recommendation by the Xcel Energy project team **[ANCHOR POSITION – IMMEDIATELY AFTER D1B]**

	Count	Valid Percent
0 – Not at all important	1	8%
1	0	0%
2	2	17%
3	1	8%
4	0	0%
5	1	8%
6	1	8%
7	1	8%
8	2	17%
9	0	0%
10 – Extremely important	1	8%

Don't know	2	17%
Total	**12**	**100%**

D1d. [ASK IF <COMPONENT> = 1 (i.e. EDA)] An endorsement or recommendation by an Xcel Energy affiliated energy modeler **[ANCHOR POSITION - IMMEDIATELY AFTER D1C]**

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	0	0%
6	2	25%
7	1	13%
8	1	13%
9	2	25%
10 – Extremely important	0	0%
Don't know	2	17%
Total	**9**	**100%**

D1e. [ASK IF <COMPONENT> = 1 (i.e. EDA)] The energy modeling offered through the **<PROGRAM>** program

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	0	0%
6	0	0%
7	3	38%

8	1	13%
9	0	0%
10 – Extremely important	3	38%
Don't know	1	13%
Total	**8**	**100%**

D1f. [ASK IF <COMPONENT> = 2 (i.e. EEB)] Support from the third-party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant)

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	0	0%
6	1	25%
7	0	0%
8	0	0%
9	1	25%
10 – Extremely important	0	0%
Don't know	1	25%
Skip	1	25%
Total	**4**	**100%**

D1g. Information from Xcel Energy marketing or informational materials

	Count	Valid Percent
0 – Not at all important	0	0%
1	1	8%
2	1	8%
3	2	17%
4	0	0%

5	1	8%
6	2	17%
7	2	17%
8	1	8%
9	0	0%
10 – Extremely important	1	8%
Don't know	1	8%
Total	**12**	**100%**

D1h. Your previous participation in an Xcel Energy program

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	1	8%
4	0	0%
5	0	0%
6	0	0%
7	2	17%
8	2	17%
9	0	0%
10 – Extremely important	2	17%
Not applicable	5	42%
Total	**12**	**100%**

D1i. Information received from any training or events conducted by Xcel Energy

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	2	17%
3	0	0%

4	0	0%
5	1	8%
6	2	17%
7	2	17%
8	1	8%
9	0	0%
10 – Extremely important	1	8%
Not applicable	3	25%
Total	**12**	**100%**

D1j. Previous experience with energy efficient equipment or materials

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	0	0%
6	1	8%
7	6	50%
8	1	8%
9	3	25%
10 – Extremely important	1	8%
Total	**12**	**10%**

[ANCOR AFTER D1j, ASK IF D1j>5 AND D1j<11]

D1j_1. Was this experience through an Xcel Energy program?

	Count	Valid Percent
Yes	7	58%
No	5	42%
Total	**12**	**100%**

D1k. Corporate policy or guidelines

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	1	8%
4	0	0%
5	1	8%
6	1	8%
7	0	0%
8	1	8%
9	2	17%
10 – Extremely important	1	8%
Not applicable	5	42%
Total	**12**	**100%**

D1l. Environmental factors like reduced carbon emissions

	Count	Valid Percent
0 – Not at all important	1	8%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	1	8%
6	2	17%
7	0	0%
8	3	25%
9	2	17%
10 – Extremely important	3	25%
Total	**12**	**100%**

D1m. Standard practice in your business/industry

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	2	17%
6	1	8%
7	2	17%
8	2	17%
9	3	25%
10 – Extremely important	2	17%
Total	**12**	**100%**

D1n. Payback on the investment

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	1	8%
3	0	0%
4	0	0%
5	0	0%
6	0	0%
7	1	8%
8	5	42%
9	2	17%
10 – Extremely important	3	25%
Total	**12**	**100%**

[ASK IF D1n>5 AND D1n<11]

D1n_1. Did the Xcel Energy rebate factor into whether the payback timeline was acceptable?

	Count	Valid Percent
Yes	6	55%
No	2	18%
Don't know	3	27%
Total	**11**	**100%**

D1o. Minimizing operating cost

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	2	17%
6	0	0%
7	2	17%
8	1	8%
9	1	8%
10 – Extremely important	5	42%
Don't know	1	8%
Total	**12**	**100%**

[ASK IF D1o>5 AND D1o<11]

D1o_1. Did Xcel Energy provide you with information on minimizing operating costs?

	Count	Valid Percent
Yes	6	67%
No	2	22%

Don't know	1	11%
Total	**9**	**100%**

[ASK IF D1o_1=1]

D1o_2. In your own words, how important was the information provided by Xcel Energy on minimizing operating costs in your decision to install this equipment?

Verbatim Response

It wasn't as much of an impact. It wasn't as detailed as I would have liked it to been.

It was very important.

It was extremely important because of knowledge of what is out there.

It was not that important.

It was pretty critical so we could estimate expense.

D1p. Achieving a certification like LEED

	Count	Valid Percent
0 – Not at all important	1	8%
1	1	8%
2	0	0%
3	1	8%
4	0	0%
5	0	0%
6	0	0%
7	1	8%
8	1	8%
9	0	0%
10 – Extremely important	2	17%
Not applicable	5	42%
Total	**12**	**100%**

D1p_1. What is this certification?

Verbatim Response

Silver/Gold.

We actually did not get an actual certification, but had we gone through the process, I think we would have gotten a LEED Gold.

US Green Building Council LEED Silver

D1p_2. Did you learn about this certification through an Xcel Energy program?

	Count	Valid Percent
Yes	1	25%
No	3	75%
Total	4	100%

D1q. Recommendation from a design team member that helped you on the project

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	0	0%
6	0	0%
7	2	17%
8	3	25%
9	3	25%
10 – Extremely important	2	17%
Don't know	2	17%
Total	**12**	**100%**

D1q_1. [ASK IF <COMPONENT> = 1 (i.e. EDA)] Was this recommendation made following the final energy/strategy analysis and packaging of design alternatives provided by the Xcel Energy energy consultants?

	Count	Valid Percent

Yes	3	50%
No	3	75%
Total	**6**	**100%**

D1q_2. [ASK IF <COMPONENT> = 2 (i.e. EEB)] Was this recommendation made after meeting with the third-party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant) to identify energy efficiency opportunities?

	Count	Valid Percent
Yes	2	50%
No	0	0%
Don't know	1	25%
Skip	1	25%
Total	**4**	**100%**

D1r. Were there any other factors that were important to your decision to participate in the program?
(ASK OPEN END)

	Count	Valid Percent
Yes	3	25%
No	9	75%
Total	**12**	**100%**

"Yes" Verbatim Response

Best Grant

BUST-->had to have high performance equipment (indirectly influential)

Maintainability of the equipment. Our maintenance staff want and buy into the systems that we chose.

[ASK IF D1r = 1]

D1r_1. How important was **[factor specified]** on your decision to install energy efficient equipment or systems using a scale from 0 to 10, where 0 means "not at all important" and 10 means "extremely important". Again, the bigger the number, the greater the influence.

	Count	Valid Percent
0 – Not at all important	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%
5	0	0%
6	0	0%
7	0	0%
8	1	33%
9	1	33%
10 – Extremely important	1	33%
Total	**3**	**100%**

[ASK ALL]

D5a. If the incentive, information, and support from the Xcel Energy **<PROGRAM>** were not available, would you have built the facility at **<BUILDING ADDRESS>** to the exact same efficiency level including installing the *exact same number, type, model, and efficiency* of equipment and the exact same building assemblies? If you are not sure, please let me know.

	Count	Valid Percent
Yes	5	42%
Maybe/Not Sure	5	42%
No	2	17%
Total	**12**	**100%**

[**IF NEEDED:** efficient building assemblies include the building shell (e.g., windows, doors, roof, foundation) and its components (e.g., high performance insulation, high performance glazing).]

[ASK IF D5a = 3, 77]

D5a_1. Why would you not have built the facility at **<BUILDING ADDRESS>** to the exact same efficiency level including installing the *exact same number, type, model, and efficiency* of equipment and the exact same building assemblies?

Verbatim Response
Lack of knowledge without program.

[IF D5a_1 = 1 AND VERBATIM IS response cost related]

D5a_2. Would the energy efficiency equipment or efficient assemblies been removed during the value engineering process?

	Count	Valid Percent
Yes	5	42%
Maybe/Not Sure	5	42%
No	2	17%
Total	**12**	**100%**

[ASK IF D5a=1,2,REF, ELSE SKIP TO S1]

D5b. Using a scale from 0 to 10, where 0 means "not at all likely" and 10 means "extremely likely", please rate the likelihood that you would have built the facility at **<BUILDING ADDRESS>** to the exact same efficiency level including installing the *exact same number, type, model, and efficiency* of equipment and the exact same building assemblies if the Xcel Energy **<PROGRAM>** was not available.

	Count	Valid Percent
0 – Not at all likely	0	0%
1	0	0%
2	0	0%
3	0	0%
4	0	0%

5	0	0%
6	2	20%
7	1	10%
8	1	10%
9	3	30%
10 – Extremely likely	1	10%
Don't know	2	20%
Total	**10**	**100%**

PROGRAMMING NOTE:

if (ans = 0) skp D5e

if (ans = 1) skp D5e

if (ans = 2) skp D5e

if (ans = 7) skp D5d

if (ans = 8) skp D5d

if (ans = 9) skp D5d

Section S: Spillover

No respondents qualified for spillover, so some questions have no responses affiliated with them.

[ASK ALL]

S1. Since your participation in the **<PROGRAM>** in **<MONTH> <YEAR>**, has your company installed any additional energy efficiency improvements at this building or at your other buildings in areas where Xcel Energy provides electricity or natural gas without a rebate from Xcel Energy?

	Count	Valid Percent
Yes	3	25%
No	9	75%
Total	**12**	**100%**

[ASK IF S1=1, ELSE SKIP TO SECTION E]

S1a. Can you briefly explain why you decided to install this energy efficiency equipment on your own, rather than through a utility incentive program?

Verbatim Response
I think it was just for speed. We just wanted to get the project done without having to wait for the applications to come.
Replacement of old equipment and the new equipment was more efficient but a rebate from Xcel was not available for it

[ASK IF S1 = 1, ELSE SKIP TO SECTION E]

S2. Did your experience with the energy efficiency equipment you installed through the Xcel Energy **<PROGRAM>** influence your decision to install some or all of the additional efficient equipment on your own?

	Count	Valid Percent
Yes	2	67%
No	1	33%
Total	**3**	**100%**

[ASK IF S2=1, ELSE SKIP TO SECTION E]

S2a. What type(s) of efficient equipment did you install without a rebate? For example, was it…?

N/A

[ASK S2b-S2f IF S2 = 1 FOR UP TO TWO MEASURES, CODING RESPONSES WITH S2b_1 and S2b_2 FOR FIRST AND SECOND MEASURES, RESPECTIVELY]

I have a few questions about the **[first, second]** equipment that you installed.

S2b. Approximately how many of this type of equipment did you install?

Verbatim Response
2
88

S2c. Please describe the **SIZE**, **TYPE**, and **OTHER ATTRIBUTES** of this measure.

Verbatim Response
Don't know
Don't know

S2d. What was the **EFFICIENCY** of this measure? Was it…

N/A

S2e. How important was your experience in the **<PROGRAM>** in your decision to install the additional energy efficiency equipment on your own? Please use a scale from 0 to 10, where 0 is "not at all important" and 10 is "extremely important".

N/A

S2f. If you had not participated in the **<PROGRAM>**, how likely is it that your organization would have installed the additional energy efficiency equipment, 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?

N/A

[END LOOP FOR EACH MEASURE]

Section E: Barriers

[ASK ALL]

E1. Did you consider installing any additional energy efficient equipment, systems, or designs at **<BUILDING_ADDRESS>** beyond the equipment that you installed?

	Count	Valid Percent
Yes	4	33%
No, all recommended equipment was installed	5	42%
No, all equipment suitable for this building was installed	1	8%
Don't know	2	17%
Total	**12**	**100%**

"Yes" Verbatim Response

We reviewed some other equipment to see if they are compatible with what we had planned out in our comped goals; but did not implement.

We have discussed solar at one point

An additional pump

Solar panels

[ASK IF E1 = 1, ELSE SKIP TO SECTION F]

E2. Why did you decide not to install that equipment? Was it:

	Count	Valid Percent
Upfront costs	1	25%
The equipment was a bleeding edge technology	1	25%
Other, specify	1	25%
Don't know	1	25%
Total	**4**	**100%**

Section F: Program Implementation and Processes

Next, I want to ask you a few questions about your experience with the program, and how the program's processes worked for you.

[ASK ALL]

F1. I am going to ask you to rate how easy or difficult the following tasks associated with the **<PROGRAM>** were to complete, using a scale from 1 to 5, where 1 is "very difficult" and 5 is "very easy". You may also tell me if something was not applicable to your experience. How would you rate the ease of…

(PAUSE AFTER EACH FOR RESPONSE. REPEAT SCALE IF NEEDED).

(RANDOMIZE QUESTIONS)

F1a. Completing the program application

	Count	Valid Percent
1 – Very difficult	0	0%
2	0	0%
3	2	17%

4	3	25%
5 – Very easy	4	33%
Not applicable	1	8%
Don't know	2	17%
Total	**12**	**100%**

F1b. Meeting program deadlines

	Count	Valid Percent
1 – Very difficult	0	0%
2	0	0%
3	0	0%
4	5	42%
5 – Very easy	4	33%
Not applicable	1	8%
Don't know	2	17%
Total	**12**	**100%**

F1c. Getting in touch with an Xcel Energy Product representative

	Count	Valid Percent
1 – Very difficult	0	0%
2	3	25%
3	1	8%
4	3	25%
5 – Very easy	3	25%
Not applicable	1	8%
Don't know	1	8%
Total	**12**	**100%**

F1d. [SHOW IF <COMPONENT> = 1 (i.e., EDA)] Getting in touch with energy consultants

	Count	Valid Percent

1 – Very difficult	0	0%
2	0	0%
3	2	25%
4	1	13%
5 – Very easy	2	25%
Not applicable	2	25%
Don't know	1	13%
Total	**8**	**100%**

F1e. [SHOW IF <COMPONENT> = 2 (i.e., EEB)] Getting in touch with the third party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant)

	Count	Valid Percent
1 – Very difficult	0	0%
2	0	0%
3	0	0%
4	1	25%
5 – Very easy	1	25%
Not applicable	0	0%
Don't know	1	25%
Skip	1	25%
Total	**4**	**100%**

F1f. [SHOW IF <COMPONENT> = 1 (i.e., EDA)] Selecting energy efficiency opportunities that align with first cost, payback, and energy efficiency expectations

	Count	Valid Percent
1 – Very difficult	0	0%
2	0	0%
3	2	25%
4	2	25%
5 – Very easy	3	38%
Not applicable	0	0%
Don't know	1	13%

Total	**8**	**100%**

F1g. [SHOW IF <COMPONENT> = 1 (i.e., EDA)] Meeting minimum savings requirements

	Count	Valid Percent
1 – Very difficult	0	0%
2	0	0%
3	2	25%
4	1	13%
5 – Very easy	2	25%
Not applicable	0	0%
Don't know	3	38%
Total	**8**	**100%**

F1h. [SHOW IF <COMPONENT> = 2 (i.e., EEB)] Selecting qualifying energy efficiency equipment

	Count	Valid Percent
1 – Very difficult	0	0%
2	0	0%
3	1	25%
4	1	25%
5 – Very easy	0	0%
Not applicable	0	0%
Don't know	1	25%
Skip	1	0%
Total	**4**	**100%**

[For each F1a-h < 3]

F2a – F2h. Why was it not easy to **<RESTORE QUESTION WORDING FROM E1A – E1G> F2c**.

Verbatim Response

It's just never easy to get in touch with the right person at Xcel

For that particular case, it was just a matter of their availability. They eventually did get back to us but took a little bit longer than we were looking for.

It is hard to find someone knowledgeable enough about the actual processes. It has more to do with accounting and being able to process and builds correctly. The customer service on Xcel Energy's side has been very poor.

[ASK ALL]

F3. From the time work started to the time you received your rebate, did the project take less or more time than you expected to complete? Please answer using a scale from 1 to 5, where 1 means the project took "much less time than expected" and 5 means it took "much more time than expected".

	Count	Valid Percent
1 – Much less time than expected	0	0%
2	3	25%
3 – About the expected time	7	58%
4	2	17%
5 – Much more time than expected	0	0%
Total	**12**	**100%**

Section G: Satisfaction (Programs and Components)

[ASK ALL]

G1. Thank you for your patience; we have only a few questions left. I'm going to ask you to rate your satisfaction with various aspects of the program. For each, please rate your satisfaction on a scale from 0 to 10, where 0 is "very dissatisfied" and 5 is "very satisfied", or let me know if it is not applicable to your project. How would you rate your satisfaction with:

[RANDOMIZE, PAUSE AFTER EACH FOR RATING, REPEAT SCALE IF NECESSARY]

(RANDOMIZE)

G1a. [SHOW IF <COMPONENT> = 1 (i.e. EDA)] The energy/strategy analysis to select a design alternative incorporating energy efficiency opportunities

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	1	13%

4	3	38%
5 – Very satisfied	2	25%
Not applicable	0	0%
Don't know	2	25%
Total	**8**	**100%**

G1b. [SHOW IF <COMPONENT> = 2 (i.e. EEB)] The consulting experience to determine energy efficient equipment / measures

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	0	0%
4	1	25%
5 – Very satisfied	1	25%
Not applicable	0	0%
Don't know	1	25%
Skip	1	25%
Total	**4**	**100%**

G1c. The amount of time it took to receive your rebate

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	1	8%
3	3	25%
4	2	17%
5 – Very satisfied	5	42%
Not applicable	0	0%
Don't know	1	8%
Total	**12**	**100%**

G1d. The dollar amount of the rebate

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	1	8%
4	4	33%
5 – Very satisfied	6	50%
Not applicable	0	0%
Don't know	1	8%
Total	**12**	**100%**

G1e. The structure of the incentive (i.e., kWh savings incentives aligned with time-of-use rates and peak coincident demand savings rebates)

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	1	8%
3	0	0%
4	5	42%
5 – Very satisfied	4	33%
Not applicable	1	8%
Don't know	1	8%
Total	**12**	**100%**

G1f. Your interactions with Xcel Energy Product staff

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	3	25%
3	0	0%
4	3	25%
5 – Very satisfied	4	33%
Not applicable	1	8%
Don't know	1	8%
Total	**12**	**100%**

G1g. [SHOW IF <COMPONENT> = 1 (i.e. EDA)] Your interactions with your energy modelers

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	1	13%
4	1	13%
5 – Very satisfied	4	50%
Not applicable	0	0%
Don't know	2	25%
Total	**8**	**100%**

G1h. [SHOW IF <COMPONENT> = 2 (i.e. EEB)] Your interactions with the third party consultants Xcel Energy contracts with to deliver the program (i.e., Nexant)

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	0	0%
4	1	25%
5 – Very satisfied	1	25%
Not applicable	0	0%
Don't know	1	25%
Skip	1	25%
Total	**4**	**100%**

G1i. The information you received on energy efficiency

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	2	17%
4	4	33%

5 – Very satisfied	3	25%
Not applicable	0	0%
Don't know	3	25%
Total	**12**	**100%**

G1j. The information you received on how to operate / maintain Installed equipment

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	2	17%
4	2	17%
5 – Very satisfied	4	33%
Not applicable	2	17%
Don't know	2	17%
Total	**12**	**100%**

G1k. The energy savings realized after the program

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	1	8%
3	0	0%
4	6	50%
5 – Very satisfied	3	25%
Not applicable	0	0%
Don't know	2	17%
Total	**12**	**100%**

[For each G1a-k < 3]

G2a – G2k. Why weren't you satisfied with **<RESTORE QUESTION WORDING FROM G1A – G1k>**

G2c.

Verbatim Response
It took about 9 months...of course COVID hit!

G2e.

Verbatim Response
It was the coincident demand. Just did not hit the mark that we were looking.

G2f.

Verbatim Response
Just my experience in general - if I go through a consultant, I don't have to talk to Xcel directly, it's much better. But if I have to try and find the right person at Xcel, it's quite difficult.
On that it's just not quite being able to get back to us with the questions we had as quickly as we would have liked It was just more with billing of everything- going from construction side to the management side. They could not connect us with the right accounts and we ended up having bills in collections that were in a positive where we were paying them, but they still went to collection. So we could not get to the right representation where we could avoid those mistakes. We still have one open account right now that we are dealing with the customer service on Xcel side.

G2k.

Verbatim Response
No fault of Xcel. It actually came down to our own operating procedures.

[ASK ALL]

G3. Thinking about your experience from start to finish, how would you rate your satisfaction with the **<PROGRAM>** as a whole? (IF NEEDED: Please use the same scale from 0 to 10, where 0 is “very dissatisfied” and 10 is “very satisfied”)

	Count	Valid Percent
1 – Very dissatisfied	0	0%
2	0	0%
3	1	8%
4	4	33%
5 – Very satisfied	6	50%
Not applicable	0	0%

Don't know	1	8%
Total	**12**	**100%**

[ASK IF G3 < 3]

G3a. Why weren't you satisfied with your experience with the **<PROGRAM>?**

No responses

[ASK IF G3 = 3 or 4]

G3b. What else could Xcel Energy do to improve your satisfaction with the **<PROGRAM>?**

Verbatim Response
Honestly, I think they just did everything they could do. I think just keep going with what they got.
I would just say responsiveness and involvement with strategic account representatives. Getting them more familiar with the programs that they are out talking about. Also their technical understanding of the incentive programs needs to improved.
Incentivize the third party more.
Discuss how the rebates transfer to gas.
More information or follow up as the job proceeded, I had to chase them down for information.

[ASK ALL]

G4. What did you like most about your experience with the **<PROGRAM>?**

Verbatim Response
I like seeing how we can make the buildings that's brand new construction as energy efficient as possible for that time and to be able to plan and set up our building for energy efficiency going into the future.
It's pretty easy and straightforward
Learning about some of the newer technologies that are available.
The process was relatively easy on our side
State of the Art hospital--saving energy for years to come
Rebate
The rebate
Verification or validation of the energy savings
Don't know

The ease of getting through the process from start to finish

Don't know

[ASK ALL]

G5. Do you have an interest in installing any of the following electrification technologies and practices?

[Read G5a – G5d one at a time, receiving answers before moving on to the next one]

G5a. Geothermal technology

	Count	Valid Percent
Yes	6	50%
Maybe	3	25%
No	2	17%
Already installed	0	0%
Don't know	1	8%
Total	**12**	**100%**

G5b. Electric Vehicle chargers

	Count	Valid Percent
Yes	6	50%
Maybe	1	8%
No	1	8%
Already installed	3	25%
Don't know	1	8%
Total	**12**	**100%**

G5c. High-efficiency heat pumps

	Count	Valid Percent
Yes	7	58%
Maybe	2	17%
No	1	8%

Already installed	0	0%
Don't know	2	17%
Total	**12**	**100%**

G5d. Demand response controls

	Count	Valid Percent
Yes	6	50%
Maybe	1	8%
No	2	17%
Already installed	0	0%
Don't know	3	25%
Total	**12**	**100%**

[ASK ALL]

G6. Are there any other technologies you are interested in that weren't previously mentioned?

No responses provided.

C.3 Nonparticipating Trade Partner Interview Findings

Introduction

This appendix presents results from the nonparticipating trade partner interviews. Trade partner research addressed the following topics:

- **Awareness and Motivations to Participate in the Product:** The evaluation team asked nonparticipating trade partners if they were aware of the product and what, if anything, would motivate them to participate in the New Construction Product. We also asked trade partners about past participation, if applicable**.**
- **Customer Decision-Making and Barriers to Energy-Efficient Designs:** The evaluation team discussed customer awareness, motivations, and barriers to pursuing energy efficient designs with nonparticipating trade partners. We also asked them about their own barriers and motivations to recommending energy-efficient designs.
- **Energy Codes and Electrification:** The evaluation team asked nonparticipating trade partners about their familiarity with and opinion of beneficial electrification technologies. We explored the extent to which trade partners are seeing shifts towards electrification

and electric vehicle readiness in their businesses. We also discussed the impact of updated energy codes on new construction.

The remainder of this appendix includes results from the nonparticipating trade partner interviews organized by process topic and research question.

Trade Partner Firmographics

What is your role at <COMPANY NAME>?

Verbatim Response
Owner
Architect and Owner
Vice President and Project Manager
Design Director
Principal Architect
President
Vice President and Senior Principal Architect
Partner
Senior Associate/Project Manager
Principal/Managing Principal

What market segments do you typically work in?

Verbatim Response
Everything from single family up to corporate headquarters.
From retail to churches to new office buildings.
Commercial with a focus on multifamily.
Multi-family, mixed use and urban infill.
Healthcare, multifamily, office buildings, restaurants, small medical (dental, optometry, vet) pretty much anything except k-12.
Office buildings, life sciences, labs.
Retail, government, multifamiliy, industrial office, medical office.
Municipal government, school districts, small private commercial.
Multifamily, ski resort buildings, commercial lodges/hotels, golf maintenance, gondola maintenance, equipment sheds.

Multifamily, office buildings, fine arts (performing arts centers, theaters, galleries), single family, mixed use, hospitality (restaurants & hotels), education.

Motivations & Barriers

Are nonparticipating trade partners aware of the Colorado New Construction Product? How is the Product perceived among nonparticipating trade partners and their customers?

Overall, nonparticipating trade partners were not well aware of the Colorado New Construction Product. Half of interviewees (n = 5) were unaware of the product. Of these five, two were surprised that energy consultants and engineers they had worked with in the past had not brought the product to their attention. Some interviewees (n = 3) also believed that their lack of awareness was due to the fact that decisions around energy efficient systems and equipment as well as applying for rebates are the clients' responsibility. Eight interviewees had not participated in the product before, while two had participated in the EDA component, but not in several years.

- One prior participant did not remember any details about the program, just that they had participated and most of the direction came through their consultant.
- One prior participant did remember details, including the size requirement and the fact that there was an incentive.
- Neither prior participant had anything negative to say about their experience.

The evaluation team asked six interviewees directly which component they would be more interested in participating in. The other four interviewees were not asked this directly, but the evaluation team discussed with them various aspects of their projects that could fit into either the EDA or EEB component.

- Two interviewees said they were interested in just the EDA component.
- Two interviewees said they were interested in just the EEB component.
- Two interviewees said they were interested in both the EDA and EEB components.
- Three interviewees had completed energy modeling as part of previous projects and may be a better fit for the EDA component.
- One interviewee seemed more interested in prescriptive measures and may be a better fit for the EEB component.

What barriers impact nonparticipating trade partners' and their customers' decisions to participate in the Colorado New Construction Product?

The most commonly discussed barrier to nonparticipating trade partner's participation in the product was a lack of awareness of the product. Eight of the ten interviewees mentioned this as a barrier. One interviewee did not list a barrier, and one interviewee was not interested in learning more. Three interviewees justified their lack of awareness by stating that these decisions were drive by clients and not architects.

- One interviewee remembered details about the product.
- Four interviewees were vaguely aware of the product, including one prior participant.

- Five interviewees had no awareness of the product.

The evaluation team also asked how nonparticipating trade partners would prefer to learn more about the program. Responses varied, but included lunch and learn-style events (n = 3) or continuing education credit opportunities (n = 3). One person mentioned the American Institute of Architects (AIA) as a venue for opportunities to learn more. Three people were not asked this question directly. There was one interviewee who was not interested in learning more and said that these types of decisions were client driven.

What barriers impact nonparticipating trade partners' and their customers' decisions to install energy-efficient equipment or systems?

The evaluation team asked nonparticipating trade partners about their own barriers and considerations around recommending energy-efficient equipment and participating in the product, as well as their perceptions of their customer's barriers and motivations to installing energy-efficient equipment and systems. The biggest barrier to trade partner product participation was a lack of awareness and knowledge of the product. Overall, the biggest perceived barrier to installing energy-efficient equipment or systems for customers was upfront costs. Conversely, the biggest perceived motivator for installing energy-efficient equipment or systems was saving money followed by environmental and sustainability considerations.

Trade partners

As discussed previously, nonparticipating trade partners' biggest barrier to participation in the product was a lack of knowledge and awareness of the product (n = 8). Two of the eight interviewees who identified a lack of knowledge and awareness as a barrier to product participation had participated in the product previously. Though these interviewees had participated before, and their past participation had been positive, they felt though they still did not fully understand the product. Those that had discussed an awareness barrier (n = 8) expressed a desire to learn more and become involved in the product.Other factors that influenced trade partners' decisions to recommend energy-efficient equipment and systems included:

- Environmental and sustainability considerations (n = 5)
- Reducing costs for clients (n = 4)
- Operational considerations (n = 3)
- Incentives (n = 2)
- LEED requirements (n = 2)
- Code compliance (n = 1)

Perceptions of customer barriers & motivations

The evaluation team asked nonparticipating trade partners about their perceptions of their customers motivations and barriers to installing energy efficient equipment and systems. The most commonly mentioned motivations were saving money (n = 9) and environmental considerations (n = 6).

- Four interviewees mentioned pursing a LEED certification as a motivating factor for some clients.

- Four interviewees discussed incentives as a motivator to installing energy efficient equipment or systems.
- Three discussed the knowledge of or ease of operation and maintenance or certain systems or equipment as a motivator to installing energy efficient equipment or systems.
- Three interviewees discussed marketing as a motivation, especially if a client was planning on selling the building and wanted it to be as green as possible. Another mentioned wanting to attract a certain clientele for using the building as a motivator to including energy efficient equipment or systems.
- Two interviewees mentioned following codes as an driver of including more energy efficiency.
- Three other motivations mentioned included: less rushed constructions schedules that allow for more time to explore efficient alternatives (n = 1), the livability of the space (n = 1), and low upfront costs (n = 1).

Nonparticipating trade partners most often mentioned up front costs (n = 5) and a split incentive (n = 6) as their customers' biggest barriers. The split incentive was discussed as both a barrier and a motivation by some interviewees (n = 3). The interviewees that discussed a split incentive described how some clients prioritize up front costs if they are selling or renting the building, and other clients prioiritze long term payback or return on investment if they are planning to be the long-term holder of the building.

- Five interviewees mentioned the current construction market as a barrier, discussing the rising cost of construction as well as supply chain issues.
- Four discussed long term costs in a variety of ways, talking about how their clients weigh payback and return on investment with upfront costs, and noted that they view upfront costs differently depending on whether they are going to be the long term owner/holder of the building, as discussed previously. Most of the time upfront cost was more important, but sometimes long term costs and payback were more important, depending on the client.
- Two interviewees discussed spacing considerations as a barrier.
- Two mentioned construction schedules including the fact that less rushed construction schedules would help with making energy efficiency decisions.
- One interviewee mentioned the cost and time required to hire an energy modeler was a barrier
- One interviewee mentioned the design review process they have to go through in certain jurisdictions as a barrier.
- One nonparticipating trade partner discussed needing to connect with the utility company early in the design process regarding decisions and timelines.

Energy Transformation

What are nonparticipating trade partners' perceptions of energy-related initiatives, such as electrification and electric vehicle (EV) and infrastructure readiness?

The evaluation team asked nonparticipating trade partners about their awareness and perceptions of electrification, emerging energy efficiency technologies, and building electrification.

- Three nonparticipating trade partners had no concerns about electrification and two of them currently recommend all electric buildings.
- The opportunities that interviewees saw with electrification included: a simplified construction process by eliminating the need to hook up new buildings to multiple utility services (n = 1), being ahead of the curve/market changes (n = 2), and the ability to rely on a cleaner grid and contribute to lower emissions (n = 4).
- One interviewee was concerned about how clean the grid was and what materials were used to make batteries.
- One interviewee was also concerned about reliability of the grid if only electricity were used for heating.
- One interviewee was concerned about running commercial kitchen equipment on electricity.

The evaluation team also asked nonparticipating trade partners if they currently recommend electric buildings.

- Six interviewees did not recommend all electric buildings.
- Two interviewees do recommend all electric buildings.
- Two discussed all electric projects that they had considered, but were not asked this question directly.

When asked about electic vehicle readiness, all (n = 10) nonparticipating trade partners considered EV readiness in their new construction projects. However, some interviewees only considered it to the extent that it was required by the jurisdictions in which they built.

- Eight nonparticipating tade partners mentioned jurisdictional requirements surrounding EV readiness and installing chargers with new construction
- Nine interviewees mentioned that clients request EV chargers in their new construction
- One interviewee thinks that clients will request EV chargers in the future.
- Marketability (n = 2), low cost (n = 1), and LEED requirements (n = 1) were also mentioned as drivers for considering EV readiness.

The evaluation team also asked nonparticipating trade partners what they saw as emerging energy efficiency opportunities and got a variety of responses, including:

- Solar (n = 4).
- Green roofing initiatives (n = 2).
- Building electrification (n = 2).

- Variable refrigerant flow (VRF) systems/chillers (n = 2).
- Building envelope and advanced framing technology (n = 2).
- Battery storage (n = 1).
- Electric vehicles (n = 1).

Code Adoption

How do trade partners see changes in above code savings impacting customer ability to participate in the Product? Do nonparticipating trade partners perceive more stringent energy code to be a barrier to participation in the Product?

The evaluation team asked nonparticipating trade partners about the impacts of updated energy codes on the new construction market and the energy efficiency recommendations they make.

- Half of all interviewees (n = 5) said that updated energy codes do not have much of an impact on new construction.
- The other half (n = 5) mentioned a few minor barriers including client pushback (n = 1), scheduling impacts as they wait for energy efficient equipment to become available (n = 1), higher costs for clients (n = 2), and a rush to get projects done under older codes (n = 1). No interviewees reported that these changes had a large impact on their work.
- All ten interviewees said that clients are generally not aware of updates to energy codes.
- One interviewee said that LEED certification is less of a driving factor for energy efficient design and construction these days as codes get closer to what LEED certifications require.

Two interviewees mentioned that under updated energy codes their building designs are closer to code minimum than they were previously. This suggests that previously, these trade partners were making recommendations that resulted in a design well above code, but that they have not continued to improve the energy performance of their design as code requirements increase.

Market Influence

Are *nonparticipating trade partners' customers installing energy-efficient equipment or systems due to any influence from Xcel Energy outside of the Product?*

In general, nonparticipating trade partners were not aware of their clients decisions to apply for rebates.

- Six were not really aware, but felt that clients were motivated by incentives no matter where they came from.
- Four were somewhat aware, but not all were sure on the details of what their clients had applied for outside of Xcel Energy rebates.
- Housing and Urban Development (HUD) financing, Colorado Housing Authority incentives, and city incentives were the only known rebates that nonparticipating trade partners knew their clients had used (n = 3).

C.4 Participating Trade Partner Interview Findings

Introduction

This appendix presents results from the participating trade partner interviews. Participating trade partner research addressed the following topics:

- **Awareness and Motivations:** The evaluation team asked participating trade partners how they became aware of the product and what their motivations were to participate in the New Construction Product. It also asked trade partners about how they decided to participate in the EDA or EEB component and whether their participation in the product has changed over time.
- **Customer Decision-Making and Barriers:** The evaluation team assessed trade partner feedback on customer awareness, motivations, and barriers to product participation and pursuing energy-efficient designs. This provided insight into broader market experiences to help supplement findings from the participating customer surveys.
- **Product Experience/Satisfaction:** The evaluation team discussed participating trade partners' product experiences and their satisfaction with the product, including their interactions with product staff (whether it be with Xcel Energy, the EEB implementer, and/or energy modelers), incorporation of energy-efficient equipment or systems into the building design, and rebate structure and levels.
- **Energy Codes and Electrification:** The evaluation team asked participating trade partners about their awareness and understanding of electrification. We explored the extent to which trade partners are seeing shifts towards electrification and electric vehicle readiness in their business. We also discussed the impact of stringent energy codes on new construction in connection with the ability to participate in the New Construction Product.

The remainder of this appendix includes results from the trade partner interviews organized by process topic and research question.

Trade Partner Firmographics

What is your role at <COMPANY NAME>?

Verbatim Response
Projet Manager - entitlements
Senior Architect
Associate Principal
Interviewee A - Manage Energy modeling, project management
Interviewee B - Project manager
President/Founder
Principal and building performance/engineering team leader
Director of artchitecure, also operations and staff management and project management

Project design - studio

Senior associate partner, senior PM for the project, overseeing the work of others within the company for design and documentation for the project. Leadership role in coordination of clients consultants

Principal and partner

COO on all the housing development.

Project management for EDA new construction programs.

Interviewee A - Architecutal team lead/director of project architecture

Interviewee B - President

Project manager

Design team member or modeler?

Response	Count
Design team member	10
Energy modeler	4

Motivations

What are design teams' motivations for participating in the product?

The evaluation team asked participating trade partners, both design teams and energy modelers, what motivates them to participate in the product. Trade partners discussed a variety of motivations for participating in the product, including product rebates (n = 4) and meeting their client's energy efficiency goals (n = 4). Other motivations included:

- Cutting costs (n = 1)
- Meeting energy codes (n = 1)
- Allowing for more coordination between city, government, firm, and contractors (n = 2)
- The opportunity to use energy modeling (n = 2)
- Three people said it was an owner based decision

What are customers' perceived motivations for participating in the Product?

Trade partners also discussed what they perceived to be their customers' motivations were for participating in the product. These included meeting codes and other jurisdictional requirements (n = 5), rebates (n = 4), reducing costs (n = 3), and sustainability (n = 3).

- One person mentioned that past participation motivated them to continue participating in the product.

- One person mentioned that they were not sure that their customers were aware that they were participating.
- One person mentioned achieving certifications as a motivating factor.
- One person mentioned the improved performance that comes from participation.
- Oner person did not get asked this question directly.

When the evaluation team asked trade partners what leads to including energy efficient equipment and systems in buildings, answers varied.

- Four interivewees discussed energy code compliance
- Nine interviewees discussed saving money and other cost considerstaions
- Sustainability and energy efficiency were brought up by five interviewees
- Four people mentioned a split incentive in this discussion including the idea that clients that are going to be long term owners tend to include more energy efficient equipment and systems.
- Two people discussed marketing as a driving force.
- One person mentioned achieving a certification as a consideration and one person mentioned familiarity with equipment.

Product Experience

What aspects of the programs are easy / challenging for design teams? How well are the Product's processes working for design teams?

Design teams did not list any major barriers to participating in the product; as discussed previously, satisfaction with the product was high among design teams. Minor challenges discussed included:

- Timeline issues (n = 2)
- Getting responses from Xcel Energy staff (n = 1)

Overall, trade partners were satisfied with the product, with 11 interviewees rating the product as somewhat or extremely satisfied; average trade partner product satisfaction was 4.3 out of 5. Only one energy modeler was somewhat dissatisfied with the product.

Overall satisfaction

Response	Count
1	0
2	1
3	1
3.5	1
4	3

5	8
Total	14

The evaluation team also asked trade partners about their satisfaction with various product elements. Some energy modelers (n = 2) were less satified with the product due to the product's reliance on the OpenStudio software and EDAPT portal. Additional scores for satisfaction questions are below.

Energy/strategy analysis to determine energy efficient equipment/measures

Response	Count
1	0
2	0
3	0
4	4
5	2
Total	6

The consulting experience to determine EE equipment/measures

Response	Count
1	0
2	0
3	1
4	2
5	5
Total	8

Modeling completed for the project

Response	Count
1	0
2	0
3	0
4	1

5	3
Total	4

Structure of the incentives

Response	Count
1	0
2	0
3	0
4	1
5	2
Total	3

Dollar amount of the rebate

Response	Count
1	0
2	0
3	1
4	2
5	2
Total	5

Interactions with Xcel Energy product staff

Response	Count
1	0
2	1
3	0
4	1
4.5	1
5	0
Total	3

Interactions with energy modelers

Response	Count
1	0
2	0
3	0
4	1
5	4
Total	5

The evaluation team also asked trade partners about their product experience. Trade partners were asked to rate how easy or difficult it was to complete product tasks on a scale of 1 to 5, where 1 is not at all easy and 5 is extremely easy. The highest ranking items, items that were easiest to complete, included the program application, selecting energy efficiency opportunities and contacting energy consultants. No product element was rated not easy, suggesting that product processes are working well for trade partners. Design teams were particularly satisfied with their interactions with energy modelers. On average, design teams rated these interactions a 4.8 out of 5. Other scores for ease of completion questions are below.

Meeting program deadlines

Response	Count
1	0
2	0
3	0
4	3
4.5	1
5	3
Total	7

Getting in touch with energy consultants

Response	Count
1	0
2	0
3	0

4	2
5	3
Total	5

Selecting energy efficiency opportunities that align with first cost, payback, and energy efficiency expectations

Response	Count
1	0
2	0
3	0
4	3
5	3
Total	6

Meeting minimum savings requirements

Response	Count
1	0
2	0
3	1
4	4
5	1
Total	6

Energy Modelers

Modelers' barriers to participation in the product centered around the use of the OpenStudio software (n = 3) and the Terms and Conditions associated with the product approval process (n = 2).

- Several energy modelers noted that OpenStudio is not typically used by their teams; OpenStudio is only used for projects that participate in the product. These energy modelers note that because of this when they are required to use OpenStudio (i.e., when they want to participate in the product) they end up being slightly higher priced and can sometimes lose bids. Modelers also noted that it is hard to get training in OpenStudio because they are often full.

Some modelers (n = 2) noted that there can be legal issues with the Terms and Conditions associated with the product approval process, and with EDA participation specifically.

- One modeler said that it has really slowed down their process and led them to funnel projects away from EDA and toward EEB.
- One noted that developers, particularly those unfamiliar with the product, often have issues with terms and conditions.
- Two modelers mentioned keeping up with current codes as a challenging aspect of product participation.

Future Coordination Around Code Changes

Are customers aware of energy code changes? Are customers aware of the impact rising baselines may have on savings achieved and rebate amountsavailable? How do changes in above code savings impact trade ally and customer ability to participate in the Product?

The evaluation team found that awareness of energy code changes varied. Seven interviewees said that their customers were aware of updates to energy code, two said their customers were not aware of energy code changes, one said their customers were sometimes aware, and 4 interviewees were not asked this question directly.

A few interviewees (n = 2) said that changing energy codes impacted their recommendations and participation in the product a great deal. One interviewee mentioned that it may make participation in the product difficult at some point as some jurisdications move towards net zero.

Do design teams perceive more stringent energy codes to be a barrier to participation in the Product?

Overall, design teams did not perceive updated codes to be much of a barrier to participation in the product. Four interviewees mentioned energy code related barriers:

- Two mentioned needing to change their designs more to reach the standard above code required for participation.
- One interivewees said they needed to keep an eye on what municipalities require more closely
- One interviewee said that achieving the required standard above code became more costly and restrictive.

The evaluation team also asked participating trade partners how changes in above code savings impacts trade ally and customer ability to participate in the product.

- Two trade partners said there was no impact.
- One said that they have to increase the energy efficiency of their recommended equipment and systems in order to achieve the appropriate above code savings.
- Two were concerned about future participation as code becomes more strict.
- One would not recommend EDA participation to customers if code becomes too strict.
- Five were not asked this question directly.

Energy Transformation

What are design teams' perceptions of energy-related initiatives such as electrification and electric vehicle (EV) and infrastructure readiness?

The evaluation team found that trade partners are aware of the shift towards electrification and receive little push-back from clients on increasing electricication. They generally were in favor of electrification and saw it as a shift that was coming.

- All interviewees were aware of electrification.
- One interviewee did not see this shift coming as they viewed gas powered equipment as dominant still.
- Two interviewees were concerned about grid and infrastructure reliability with higher electric loads.

When asked about electrific vehicle readiness, participating trade partners all considered electric vehicles in their designs.

- Ten interviewees mentioned that electric vehicle readiness was required by some jurisdictions, and that was a big part of their consideration in including EV readiness.
- Seven interviewees mentioned that clients request EV readiness for a number of reasons including sustainability and market pressure.

C.5 Peer Utility Interview Findings

Introduction

As part of the TRC Companies (TRC) evaluation of the Xcel Energy New Construction Product in 2021, TRC conducted secondary research and in-depth interviews with key staff at peer utilities that operate commercial new construction programs. The objective of the peer utility benchmarking research was to understand how peer utilities approached key issues related to implementing commercial new construction programs. The evaluation team's findings are informed by interviews with key informants (e.g., program managers) at five utilities (shown in this memo as Utilities A-E). These utilities were selected because they have comparable territories and/or programs to the Xcel Energy New Construction Product. This enables the evaluation to provide an "apples-to-apples" comparison, and to evaluate the set of circumstances (such as regulation, retail channels, demographics) that impact program plans at peer utilities.

The interviews and secondary research focused on assessing program design delivery, and key performance indicators (e.g., participation levels, free-ridership) of peer utilities. Key themes the evaluation team explored with peer utilities included:

- Program descriptions including their objectives, relevant features of their implementation strategy, modeling software and tracking systems used, recent changes to the program, and future outlook;
- Measure types and incentive levels including specific performance and building type requirements;

- Accounting for adoption of updated energy codes and rising baselines within programs, if at all, including changes that equip utilities to effectively support buildings;
- Support for electrification and electric vehicle readiness, and how programs support broader utility goals related to these topics, if at all, and;
- Net-to-gross (NTG) savings approach and results.

The remainder of this memo presents results based on each research objective.

New Construction Program Structures

TRC conducted interviews with five of Xcel Energy's peer utilities with comparable commercial new construction programs. Program 2020 savings goals, actual savings, and budget are shown in Table 18 below. Details on program structure including components offered, performance and building requirements is shown in Table 19 below.

Table 18. Program Savings & Budget

	2020 Program Savings Goal	2020 Program Savings Actual	2020 Program Budget
Xcel Energy	12,721 kW 43,897,225 kWh 51,627 Dth	62,467,232 kWh 18,928 kW 138,488 Dth	Electric: $12,733,572 Gas: $506,817
Utility A	Not provided	3.3 MW 11,115 MWh	$1,209,962
Utility B	24,000 kW 218,337,000 kWh	214,098,834 kWh 33,409 kW	$17,783,782[a]
Utility C	Not provided	58,487 MWh 162,330 MCF	Electric[b]: $56,322,328.66 Gas[b]: $16,620,168
Utility D		Not Provided	
Utility E	169,814 kWh 9,379 therms	287,821 kWh 6,999 therms	$139,871

[a] This budget is for Utility B's commercial new construction and retrofit program

[b] This budget is for all of Utility C's Business program

Table 19. Program Structure

	Utility A	Utility B	Utility C	Utility D	Utility E
Program Components	Both prescriptive and performance	Both prescriptive and performance	Prescriptive, performance, and LEED whole building tracks	Prescriptive, performance[b], and green building tracks.	Multiple performance tracks
Performance requirements (% better than code)	10%	Depends on local code: • 10% for 2009 IECC • 5% for 2012 to 2018 IECC	10%	Not provided	5%

Building Requirements	Performance track: 25,000 square-feet or more of conditioned floor space	None. Include incentive cap of $1,000,000	None. Must be adding additional square-feet or changing the use of the space	• 10,000 square-feet or larger[a] • Operate for at least 4 consecutive hours during peak periods	• Track 1: between 5,000 and 15,000 square-feet • Track 2: greater than 15,000 square feet

[a] This interviewee noted that they believe 10,000 square-feet is too small for an EDAPT-type program.
[b] In 2020 the performance component was no longer accepting new projects.

We also asked peer utilities about implementation strategies used by staff and implementers, including how programs engage participants and trade partners. Utilities were split in whether they conducted dedicated outreach for the new construction program (Utility A, Utility, D, Utility E) or conduct outreach as part of the broader business portfolio. Most utilities did however highlight the importance of account representative support. The following list describes these strategies.

- Utility A described a variety of methods for engaging trade partners including technical webinars, an on-demand "learning hub" that allows trade partners to earn Building Performance Institute (BPI) and American Institute of Architects (AIA) continuing education credits, trade ally newsletters, and engaging with a variety of associations including those for school administrators, healthcare engineers, and mechanical trade partners. Utility A also noted that they intentionally began developing their trade ally network within the past couple years by conducting direct outreach to their service territory's largest construction firms. Finally, this interviewee noted the importance of the account management team, noting that the program "doesn't exist" without them.
- Utility B offers a variety of trainings to their trade partner network, which have been offered online since the beginning of the COVID-19 pandemic. This interviewee noted that they have a good relationship with their trade ally network and rely on these contractors for participation. Utility B also utilizes account managers to help engage participants, as well as the economic development team.
- Utility C does not conducted dedicated new construction outreach, but rather engages with trade partners through overall business program marketing efforts including trade ally newsletters. Their trade allies include both architecture and engineering firms.
- Utility D highlighted the education, including seminars, that is a piece of the green building component as a primary way that the program engages participating customers and trade partners. This interviewee also highlighted the support of key account representatives.
- The implementer for Utility E's program maintains close relationships with participating architects, who help to feed new projects into the program. The implementer also works closely with Utility E's account managers to ensure they are aware of upcoming projects. This utility subscribes to Construct Connect Insight, a construction lead aggregation service, to identify new projects and closely follows economic development news in their key markets. Utility E also conducts email campaigns, advertises for the program on

LinkedIn, and presents at annual conferences including AIA conferences. Finally, Utility E presents awards yearly for the project that had the best energy savings.

Recent & Upcoming Program Changes

We asked interviewees to describe changes made to their new construction program in recent years, as well as anticipated changes expected in the near future. These changes are summarized in the bullets below.

- Utility A noted that the program underwent a major change in 2020 to how they calculate incentives. About five years ago, this utility began focusing heavily on incentives associated with summer peak savings, however this interviewee noted that this incentive structure resulted in a significant drop in participation. In 2020, the program adjusted the incentive structure so that participants receive $0.02/kWh with a bonus for summer peak savings. The interviewee noted that this has increased rebate amounts, and they hope that it will increase participation.
- In 2020, Utility D's EDA-type program was closed to new participants; this change was due in part to anticipated changes to EDAPT. The program was open to new participants in the prescriptive and green building components.
- Utility E lowered the program incentive cap from $1,000,000 to $200,000 in 2022. Utility E also made changes to the participation components offered in 2020.
  - Utility E removed an "ongoing performance" component in 2020. In this component, two years after verification Utility E would compare energy bills to the final verification. If energy bills were 20% or more higher than the final verification the customer was offered the opportunity to explore the reasons why. Interviewees noted that while this component was well received by customers, strategies were typically low-cost changes to controls; incremental cost was typically not high enough to pay an incentive for these changes.
  - Utility E is considering adding a component to their new construction program focused on data center renovations. This component would focus on data center operations and would not include full energy modeling. The program would not be advertised through the new construction program, but would be included in the new construction program budget.

Modeling Software and Project Tracking

TRC asked peer utilities about the software energy modelers are able to use for their performance-based program component, as well as what system the program uses to track project progress. These findings are summarized in Table 20 below. Peer utility interviewees reported that trade partners participating in their programs used a variety of modeling software. Three of the five utilities we spoke to (Utility A, Utility B, Utility C) allow energy modelers they work with to use multiple software types. Two of these three utilities (Utility A, Utility B) do not have restrictions on what kind of modeling software their energy modelers could use. However, Utility A makes recommendations to energy modelers based on the software internal engineers were familiar with, including eQUEST, EnergyPlus,[11] and TRACE. Utility D provides energy modelers with a list of four or five pre-approved software options, including eQUEST, TRACE,

[11] DOE does most of its work with EnergyPlus in OpenStudio. However, EnergyPlus is compatible with several graphical interfaces, including BuildSimHub, DesignBuilder, and TRACE 3D Plus.

EnergyPlus, and Carrier HAP, to choose from. Utility E has all of their modeling completed by the program implementor, who uses an online interface called NEO that runs off of DOE-2. NEO is a web interface that allows them to make changes in real-time at design meetings. For more complex projects, just the DOE-2 software is used. Utility E's EDA-type program is currently on hold, however previously energy modelers were required to used OpenStudio for program projects. Utility D reported that OpenStudio was not popular among participating energy modelers, and energy modelers typically only used OpenStudio for projects rebated through the program.

Table 20. Peer Utility Modeling Software & Project Tracking

Utility	Modeling Software	Tracking System
Utility A	Open to use whichever software meets guidelines	Trade partner portal with dashboard for all project progress
Utility B	No limitations	Tracked by implementation contractor using an internal system
Utility C	4 or 5 approved models	Applications for performance-based component not submitted until end of project; Prescriptive component tracked through trade partner portal
Utility D	EDA-type program currently on hold, previously used OpenStudio for program projects	Used EDAPT previously
Utility E	Implementor completes modeling on online interface called NEO	Tracked by implementation contractor using internal project management tool

Peer utilities also reported a variety of project tracking processes; however, two of the five utilities relied on trade partner portals to track project progress. The following list describes how the peer utility track project progress (additional detail in Table 20):

- Two utilities tracked their application progress using an internal system managed by the implementation contractor.
- One utility had used EDAPT previously to track project status. This utility paused their EDA-type program in part due to uncertainty with the EDAPT platform and is currently evaluating new processes and tools.
- One utility allows customers and/or trade partners to track progress through the trade partner portal, which is the same portal the utility uses for all their energy efficiency programs. The portal includes a dashboard for all projects that shows their individual progress (i.e., in review, review complete, processing).
- One utility uses different processes for their performance-based and prescriptive components. For the performance-based component that includes energy modeling, the

modeling analysis is submitted at the same times as the program application, which occurs at the end of the project. Project progress for the prescriptive/custom component is tracked through their trade partner portal. For this track, trade partners must submit a pre-notification application in the early design phase.

Peer utilities also vary in how they interact with energy modelers. Utility A, B, C and D are open to all modelers and allow customers to choose their own energy modeler. Utility E has an implementer that does all of the energy modeling. Xcel Energy allows customers to work with a group of pre-approved energy modelers.

Updated Energy Codes & Electrification

We asked interviewees about how they address rising baselines due to updated energy codes. Most interviewed peer utilities did not actively or intentionally consider updated energy codes in their program designs. One utility that operates in a home rule state discussed the methodology used to determine the baseline for savings estimation; adopted energy code is not the baseline this utility uses. Summary findings can be found in the below bullets.

- Utility A, which operates in a home rule state, uses one baseline for all participating projects, regardless of the local jurisdiction's energy code. The program completes a scan of adopted energy codes in their service territory to determine the baseline; in 2020 the baseline was updated to ASHRAE 2013.
- Utility B and Utility C do not actively or intentionally consider updated energy codes in their programs.
- Utility D and Utility E both monitor building code updates, and believe that more aggressive codes will initially impact program savings, but that this effect will balance over time. Neither utility currently accounts for these updates or impacts in the program design.

We also asked interviewees about how they are incorporating or addressing local jurisdictions' electrification initiatives into their program design. Most peer utilities did not support jurisdictional electrification initiatives, noting that electrification pops up as a topic of discussion from time to time, but is not actively considered. Utility A has begun including electrification measures, while Utility E stressed that they are not actively trying to fuel switch. Summary findings can be found in the below bullets.

- Utility A has recently begun offering incentives for some electrification measures. This utility has a lot of warehousing and distribution centers within its service territory, so they decided to offer incentives for energy-efficient truck refrigeration and electric forklifts. In marketing the electric forklift measure, the utility highlighted how to manage charging to avoid charging during peak periods.
- Utility E noted that they promote the most efficient strategy for customers, which could be an efficient gas systems; they are not actively trying to fuel switch. Interviewees did note that some environmental interveners are pro-electrification, but that they will not actively support electrification initiatives unless something is done statewide.

Net-to-Gross Ratios

As part of the evaluation team's assessment of the Xcel Energy net-to-gross ratio (NTGR), Xcel Energy wanted to better understand what other utilities use for their NTGR and any drivers

leading to the NTGR. The NTGR for each peer utility can be found in Table 21. NTGR fall between 0.70 and 1.00.

Table 21. Peer Utility Net-to-Gross Ratios

Utility	NTGR	Source
Utility A	1.00	Stipulated
Utility B	Region A: 0.90 Region B: 0.74	Evaluated
Utility C	0.90	Stipulated
Utility D	Not Provided	N/A
Utility E	0.70	Evaluated

Business New Construction Evaluation

2021 Program Evaluation: Recommendations and Responses

The Xcel Energy Business New Construction product in Colorado helps commercial and industrial (C&) customers include energy-efficient systems and equipment in the design of new construction or major renovation projects. The New Construction product currently includes two primary components; Energy Design Assistance and Energy Efficient Buildings.

Xcel Energy (The Company) engaged a team of researchers led by TRC Companies to conduct a process and impact evaluation of the Business New Construction product. The evaluation team conducted research to satisfy the following research objectives:

- Estimate product influence on customer decisions (net-to-gross ratio)
- Assess the customer experience to understand what is working well, what the most important or valuable aspects of the product are, how customers feel about incentive changes, and what they would like to see included in the product
- Understand what motivates C&I customers and building design teams to participate in the product
- Identify where members of the building community (e.g., customers, design teams, energy modelers) are in their own energy transformation journeys to gauge interest in and understanding of jurisdictional goals (e.g., electrification, electric vehicle, and infrastructure readiness)
- Understand the extent to which increasingly stringent energy code adoption and rising baselines serve as a barrier to participation among customers
- Investigate opportunities for future coordination with other Xcel Energy departments and customer-facing staff to address gaps in customer expectations related to the impact of expected code changes, level of savings achieved above code, and rebate amounts
- Identify possible product improvements that would increase product savings, with a focus on peak demand savings and TOU, and support local communities in meeting their energy goals

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 0.86 if program design and implementation remains the same.	The Company agrees to apply the recommended NTGR values for Energy Design Assistance and Energy Efficient Buildings.
2) Strengthen relationships between product staff and strategic account representatives.	The Company agrees with this recommendation.
3) Work more closely with EEB implementors to understand barriers to selecting energy-efficient equipment and provide clarifications as needed.	The Company agrees with this recommendation.
4) Consider opportunities that allow energy modelers to use multiple energy modeling software.	The Company has begun exploring additional software capabilities. While no immediate opportunities have been identified, the Company will continue to evaluate ways to enable additional modeling software. .

5) Offer training on OpenStudio to participating energy modelers.	The Company agrees to help supplement OpenStudio trainings.
6) Offer training on electrification technologies and practices for design teams.	The Company agrees to offer trainings on electrification technologies and practices for design teams. The Codes and Standards support offering within Business New Construction also provides trainings to design teams and other key stakeholders on many topics related to emerging practices, including electrification.
7) Align New Construction offering with utility-wide discussions around carbon-free goals to make the operating cost of electric heating more feasible to customers.	The Company agrees to evaluate utility-wide discussions around carbon-free goals to make the operating cost of electric heating more feasible to customers.
8) Explore additional channels to identify and engage with customers and trade partners.	The Company agrees with this recommendation.