

Xcel Energy

Evaluation of the Small Business Lighting Program—Colorado

December 16, 2016



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EXECUTIVE SUMMARY

Xcel Energy is looking for meaningful ways to improve the elements of its demand side management (DSM) programs, its customer-reach capabilities, and the operation efficiency of their programs so that they can successfully meet program goals and objectives. To assist Xcel Energy in this aim, Xcel Energy selected through a competitive Request for Proposals (RFP) process a third party vendor (comprised of Tetra Tech and NMR Group—hereafter the “Tetra Tech team”) to conduct objective evaluations of their DSM programs in Minnesota and Colorado.

The Colorado Small Business Lighting program was evaluated in 2016. This executive summary provides an overview of the 2016 process and impact evaluation of the program.

I. PROGRAM DESCRIPTION

Xcel Energy’s Small Business Lighting (SBL) program in Colorado provides customers with rebates and direct install services for energy-efficient lighting measures, including LEDs, fluorescents, and controls. Electric customers under 400kW in peak demand may participate in the program via four tracks: prescriptive rebate, custom rebate, direct install, and midstream LED Instant Rebate. Custom projects must be preapproved by Xcel Energy and participants must not have purchased the equipment prior to receiving preapproval. In contrast, prescriptive projects do not require preapproval and equipment must be purchased prior to submitting a rebate application. The LED Instant Rebate, which is implemented by Ecova, provides customers with point-of-sale discounts for eligible ENERGY STAR® LEDs available from participating distributors. In addition, customers are eligible for additional support provided by CLEAResult while those under 100kW in peak demand are also eligible for direct install services of LEDs and aerators. Both the instant rebate and direct install components were launched in 2015.

Xcel Energy’s program marketing is driven through two core mechanisms. First, the implementation contractor actively targets both trade partners and customers to encourage program participation. This outreach includes industry events, community outreach, newsletters, telephone calls and emails. Second, Business Solutions Center (BSC) staff communicate, typically on a reactive basis, with customers calling in to Xcel Energy. In addition, BSC staff also conduct proactive outreach on a regular basis to customers to solicit projects.

Trade partners play a key role in working with customers to submit program applications and also sell LEDs through the instant rebate program. Xcel Energy provides training to trade partners and updates trade partners about program changes and new opportunities.

II. EVALUATION METHODOLOGY

The Tetra Tech team conducted an evaluation of the Colorado SBL program in 2016. The process evaluation provides Xcel Energy with a thorough understanding of customer and trade partner awareness, satisfaction, attitudes and behaviors as well as benchmarked information for similar programs offered throughout the country. The evaluation’s net-to-gross calculations to estimate net energy savings employ triangulation methods for best estimates of program attribution.



The evaluation research included the following primary activities: five internal staff interviews, 140 participant customer surveys, 34 nonparticipant surveys, 15 qualitative trade partner interviews, surveys with 18 influential vendors representing 21 projects, and a benchmarking study of five other utility programs including three peer program manager interviews.

III. SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

The Colorado SBL program is currently reaching its savings goals. The SBL program achieved savings goals in 2015, although fell short in 2014 due to the transition to a new implementation contractor as well as the elimination of T12 to T8 fluorescent measures. Because the market has rapidly evolved over the past several years due to the introduction of LEDs, the prescriptive and instant rebate tracks are challenged to keep abreast of new LED technologies and prices, and then set appropriate rebate levels.

The program's design is generally consistent with peer programs and the participating customers and trade partners have positive impressions of the program design. Research indicates that product offerings are reasonable and rebate amounts are adequate to encourage participation; however, there is opportunity for additions and refinement. Xcel Energy has a well-developed and coordinated DSM staffing infrastructure and program staff appear well-qualified and adequately supported to manage and promote the program.

The availability of the program is an important factor for participating customers in their decision-making processes, reflected in the high NTG ratios. On top of upfront costs, ROI, measure performance, and energy savings, customers strongly factor program measure eligibility and incentives into their decision-making processes.

While participation barriers are limited, some trade partners indicate that budget constraints, inadequate ROI, and limited knowledge of lighting technology may present hurdles for customers. Trade partners—who have an excellent understanding of the program participation process—are vital in helping customers select equipment and navigate the program application process. From the trade partner perspective, the custom participation track can be challenging to navigate, and the preapproval process can cause uncertainty regarding rebate amounts. Trade partners also observe some redundancies in program applications. Nonetheless, trade partners and customers are generally satisfied with their program experience.

LEDs will continue to penetrate the commercial lighting market in the coming years, and the SBL program will be pivotal in supporting that transition. Advanced lighting controls also are an important growth technology.

Based on the evaluation findings, the evaluation team offers the following recommendations for Xcel Energy's consideration:

Program Recommendations
<ul style="list-style-type: none"> The evaluation team recommends NTG ratios for near future program years of 89 percent for downstream rebates, 90 percent for the direct install channel, and 92 percent for the LED Instant Rebate program.
<ul style="list-style-type: none"> Consider the efficiency advantages to integrating the direct install components of the SBL and commercial refrigeration programs.
<ul style="list-style-type: none"> Continue ongoing reviews of instant discount levels and leverage qualifying product lists to adapt to the ongoing market evolution. In addition, consider shifting more LEDs from the prescriptive to the LED Instant Rebate track.
<ul style="list-style-type: none"> Maintain current internal communication processes and continue to ensure there are adequate resources to effectively administer program functions. Encourage staff to continue to expand their abilities to maintain the high level of support that they currently provide to trade partners and customers.
<ul style="list-style-type: none"> Continue promoting the program in order to reach customers who are unaware of the program and encouraging trade partners to promote the program to their clients. Prioritize direct engagement between Xcel Energy and the customer when communicating program details to customers—email may be the best channel for establishing this connection.
<ul style="list-style-type: none"> Continue developing relationships with and communicating with trade partners to ensure a positive and smooth customer experience. Leverage both CLEAResult and the trade partner newsletters and continue to make Xcel Energy representatives available to assist trade partners with customers.
<ul style="list-style-type: none"> Consider ways to simplify the custom application and improve the transparency of custom rebate calculations to trade partners and participants, if possible.
<ul style="list-style-type: none"> Allow for information transfer between prescriptive and custom applications or consider integrating them into a single application, if feasible.
<ul style="list-style-type: none"> Continue offering competitive rebate levels, useful tools, and strong customer service.
<ul style="list-style-type: none"> Consider offering a wider selection of LEDs through the LED Instant Rebate program, evaluating the impacts on program cost-effectiveness.
<ul style="list-style-type: none"> Continue supporting contractors in their efforts to educate customers. Focus on improving customer-facing materials that help customers understand program processes and lighting technologies.
<ul style="list-style-type: none"> Continue to push marketing to engage customers that are considering energy-efficient lighting, in particular LEDs.
<ul style="list-style-type: none"> In addition to focusing on LEDs, follow through with the promotion of advanced lighting controls under the custom program. Once integrated, investigate how—if at all—controls could be included in the prescriptive track. In addition, educate trade partners on the benefits of advanced lighting controls.

Specific key findings and recommendations from the evaluation are discussed below.

NET-TO-GROSS

The net-to-gross (NTG) research indicates high program attribution, although slightly lower than current program NTG assumptions.

To estimate program attribution, the evaluation team employed a triangulation or preponderance of evidence approach—an identified best practice in the industry for net savings—to recommend a NTG ratio for the program.

The evaluation team calculated NTG ratios using the self-report approach (SRA). The SRA NTG is based on quantitative surveys with recent participating customers, participating distributors, and influential vendors (trade partners identified by participating customers as being influential in their decision-making process). The evaluation team further triangulated the calculated SRA NTG ratios with other sources of information to recommend NTG ratios for the SBL program that the team believes most accurately represents program attribution. The triangulation data sources include market transformation indicators from influential vendor surveys, in-depth interviews with trade partners, benchmarking review of NTG estimates of similar programs, nonparticipant installations of energy efficient equipment, and known program changes that may affect future attribution levels.

Using the self-report approach (SRA), the evaluation team calculated NTG ratios of 89 percent for the downstream rebate program (18 percent free-ridership and 7 percent spillover), 84 percent for the direct install channel (18 percent free-ridership and 3 percent spillover), and 92 percent for the LED Instant Rebate program (39 percent free-ridership and 31 percent spillover).

Findings from the triangulation research suggests that the calculated NTG ratio of 84 percent for the direct install channel from customer self-reports likely underestimates the program's influence on direct installations. The SRA NTG estimate of 84 percent is based on relatively limited sample (28 customer self-reports), and includes an 18 percent overall free-ridership estimate with a precision-level of ± 9 percent at the 90 percent confidence level. The SRA results also found a free-ridership rate of 18 percent for the downstream rebate component, with a more robust participant sample. Considering that direct install measures are provided to customers free of cost and are directly installed by the program, all else equal, we would expect lower levels of free-ridership for direct install measures compared to rebated measures. In addition, the benchmarking research found NTG estimates for two peer small business direct install programs against which to benchmark the SBL program results, and both had higher evaluated NTG ratios. An evaluation of Duke's Small Business Energy Saver (SBES) program estimated a free-ridership rate of 4 percent, spillover of 0 percent, and therefore an overall NTG ratio of 96 percent. PECO's evaluation results for its Smart Business Solutions program resulted in 10 percent free-ridership, 0.2 percent spillover, and an overall NTG ratio of 90 percent.

With these considerations in mind, the evaluation team feels an upward adjustment to the calculated NTG ratio is warranted for the direct install channel, although the program's current planning estimate of 100 percent is likely too high based the customer self-report and benchmarking findings. Therefore, we recommend an upward triangulation adjustment of 6 percent to the calculated SRA NTG ratio for the direct install component, from 84 percent to 90 percent, based on an average of the SRA results and the two benchmarked programs' NTG estimates.

While the NTG research included estimation of participant and nonparticipant like-spillover effects through participant and vendor self-reports, quantification of additional possible market effects was not included within the scope of the evaluation. As a result, the recommended NTG ratios are conservative estimates of program attribution.

Recommendation #1: The evaluation team recommends NTG ratios for near future program years of 89 percent for downstream rebates, 90 percent for the direct install channel, and 92 percent for the LED Instant Rebate program.

PROGRAM DESIGN

The SBL program design is generally consistent with peer programs and well viewed by customers and trade partners.

The SBL program utilizes a combination of per-fixture rebates (LED Instant Rebate and prescriptive tracks) and kWh savings incentives (custom track). This is generally consistent with peer programs. Some peer programs have a midstream program under the umbrella of their prescriptive program (Duke Energy) or opted not to offer a midstream lighting program at all (PECO). Benchmarking interviewees identified direct install and simplified application processes as keys to success for their small business lighting programs. In addition, most SBL participants do not believe the program design requires substantial changes. Trade partner interviewees generally had positive impressions of the overall program design as well.

Xcel Energy offers a separate commercial refrigeration program that provides similar direct install measures as the SBL program as well as a few lighting measures for refrigeration applications. Because these two programs both serve similar customers with some overlap of measure offerings, there may be efficiency advantages to program integration. In addition, other program administrators offer comprehensive programs for small business customers that cover multiple technologies, including lighting, refrigeration, and water heating. Comprehensive programs operated by a knowledgeable implementation contractor can reduce customer confusion and be more adaptable as the lighting market evolves to offer smaller savings opportunities.

Recommendation #2: Consider the efficiency advantages to integrating the direct install components of the SBL and commercial refrigeration programs.

Product offerings are generally in line with peer programs and rebate amounts are adequate to encourage participation, yet there is opportunity for additions and refinement.

Because the lighting market has rapidly evolved over the past several years due to the introduction of LEDs, programs are challenged to keep abreast of new LED technologies and prices. Because LEDs provide the vast majority of program savings, the SBL prescriptive and instant rebate programs require up-to-date, accurate data on LED pricing in order to set appropriate rebate levels and prescriptive technical assumptions. In order to remain flexible, one peer program utilizes pre-approved lists from the Lighting Design Lab, the Design Lights Consortium, and ENERGY STAR® and also maintains a list of products sold in their region which have been approved during previous custom project applications. Since launching in early 2015, the LED Instant Rebate program, in particular, has achieved savings goals by—in



the opinion of program staff—adapting to the market via the introduction of new models and adjusting discount levels.

A few LED Instant Rebate trade partners noted that rebate levels were dropping to mirror LED price trends and expressed concern that reduced rebates might discourage customers. Other downstream trade partners named certain products for which they hoped to see increased rebates, such as LED high-bay and exterior lighting, or higher rebates for more efficient products and lower rebates for less efficient products. However, both downstream and LED Instant Rebate customer participants report satisfaction with the available rebate amounts.

LED Instant Rebate trade partners saw opportunities to add G24 LEDs to the program as replacements for 26-watt CFLs in large buildings. Trade partners also suggested adding T8 LEDs and moving four-foot LEDs and PL lamps from the prescriptive program to the LED Instant Rebate program.

Recommendation #3: Continue ongoing reviews of instant discount levels and leverage qualifying product lists to adapt to the ongoing market evolution. In addition, consider shifting more LEDs from the prescriptive to the LED Instant Rebate track.

PROGRAM ADMINISTRATION

Xcel Energy has a well-developed and coordinated DSM staffing infrastructure.

Xcel Energy's staffing structure has been key to the success of its DSM programs by facilitating both customer and trade partner outreach and engagement. Staff juggle multiple responsibilities, which can be demanding; however, Xcel Energy has demonstrated a commitment to identifying and addressing staffing needs as they arise. Recent examples include the re-organization of the BSC and the creation of the team lead position a few years ago.

Compared to other benchmarked programs, Xcel Energy has one of most robust DSM staffing infrastructures. At Xcel Energy, an inclusive team of staffers contribute to the success of the SBL program, including product managers, team leads, energy efficiency engineers, rebate processors, and BSC energy-efficiency specialists. In November 2016, Xcel Energy announced a re-organization to create a dedicated lighting team consisting of both Colorado and Minnesota staff. At Duke Energy, the program manager is the only Duke Energy staff member devoted exclusively to their Small Business program. Additional support staff work with multiple energy efficiency programs. At PECO and PSE, the interviewees described how they manage multiple programs, with support staff that manage each program individually.

Interviews and surveys did not point to any shortcomings when it came to program staff's capabilities of knowledge. In fact, trade partner interviewees referred to program staff as "immensely helpful" and "resourceful."

Recommendation #4: Maintain current internal communication processes and continue to ensure there are adequate resources to effectively administer program functions. Encourage staff to continue to expand their abilities to maintain the high level of support that they currently provide to trade partners and customers.



PROGRAM IMPLEMENTATION AND DELIVERY

The SBL program effectively leverages the efforts of the implementation contractor, trade partners, and the BSC to promote the program.

The primary source of marketing and leads for the peer utilities' small business lighting programs are their implementation contractors, similar to CLEAResult's role in the SBL program. Xcel Energy markets the program to potential participants through two primary channels: CLEAResult and BSC. Xcel Energy staff also provides training and updates to trade partners, who are key partners in the program, to disseminate information to customers.

Less than one-third of the eligible nonparticipating customers (10 of 34) were aware of the SBL program. However, trade partner interviewees observed an increase in customer awareness of the SBL program over the past year (September 2015 through August 2016), attributing it to customers' growing awareness of rebate programs and Xcel Energy's active promotion. Trade partners attributed this increase to the program's promotional efforts, although all 15 trade partner interviewees reported that they introduce the program to their customers as well.

Email appears to be the preferred method of communication, as nearly two-thirds of participants (64 percent) prefer to receive information about Xcel Energy's programs via email. Among nonparticipant customers, email was also the most preferred method for receiving information from Xcel Energy (61 percent).

Recommendation #5: Continue promoting the program in order to reach customers who are unaware of the program and encouraging trade partners to promote the program to their clients. Prioritize direct engagement between Xcel Energy and the customer when communicating program details to customers—email may be the best channel for establishing this connection.

Trade partners' understanding of program processes is a vital element of program implementation and delivery.

According to program staff, trade partners play a key role in working with customers to submit program applications and also sell LEDs through the instant rebate program. Trade partners reported a good understanding of the program processes, as well as the decision-making process for directing a project to the custom, prescriptive, or LED instant rebate tracks. Trade partners agreed that no changes were necessary to further simplify this decision-making process.

Trade partners reported a strong understanding of which products are program-eligible; however, customers are often confused by the distinction. More than one-half of participating customers received assistance completing the application from outside of their organization, primarily from the equipment vendor, distributor, or contractor. Indeed, many trade partners reported navigating the application process on behalf of their customers.

Xcel Energy provides training to trade partners and updates trade partners about program changes and new opportunities. Xcel Energy is also evaluating launching a comprehensive website with program resources for trade partners. Trade partners were pleased with the



program support they receive and their program interactions—they consider program and rebate updates the most important information and are satisfied by the support in this area.

Recommendation #6: Continue developing relationships with and communicating with trade partners to ensure a positive and smooth customer experience. Leverage both CLEAResult and the trade partner newsletters and continue to make Xcel Energy representatives available to assist trade partners with customers.

The custom participation track can be challenging to navigate, and the preapproval process can cause uncertainty.

Overall, the prescriptive and instant rebate tracks are easier to navigate than the custom track and are often preferred by the trade partners due to the relative simplicity of the application process. However, program staff indicated that the custom preapproval process was opaque and therefore a source of uncertainty for both participants and trade partners. Some downstream trade partners suggested making the custom application more transparent and offering tools to help them calculate the rebate themselves, citing lower-than-anticipated rebates as the common deterrent for customers who received custom preapproval but did not apply for program rebates.

Some trade partners also indicated the application process seemed redundant if they participated in more than one track and were required to fill out each application in its entirety. PECO's Smart Energy Solutions program has addressed this concern as customers can transfer information between applications.

Recommendation #7: Consider ways to simplify the custom application and improve the transparency of custom rebate calculations to trade partners and participants, if possible.

Recommendation #8: Allow for information transfer between prescriptive and custom applications or consider integrating them into a single application, if feasible.

MARKET RESPONSE

Trade partners and customers are satisfied with the downstream program experience.

Downstream participants were pleased with the program because of the customer service they received from both Xcel Energy and the trade partners. In addition, they were most satisfied with the amount of time required for custom project preapproval and time to receive rebates (average ratings of 8.8 each on a 0 to 10 scale, with 0 being “very dissatisfied” and 10 “being very satisfied”) and the rebate amount (8.7). Participants were also pleased with Xcel Energy overall, and, on average, report that they are more likely to recommend Xcel Energy to a friend or colleague than nonparticipants (average ratings of 9.0 and 7.2 out of 10, respectively).

Trade partners were particularly pleased by the increase in LED sales that they saw from participating and their customers' satisfaction with the program. Their preferences for Xcel Energy's program over other utility programs was due to the competitive rebate levels and



knowledgeable program staff. Nearly all believed that the program has increased the size and/or number of their lighting projects.

Recommendation #9: Continue offering competitive rebate levels, useful tools, and strong customer service.

The LED Instant Rebate program received a favorable response from participants and trade partners.

Participants are very satisfied with the LED Instant Rebate program. On a 0 to 10 scale, with 0 being “very dissatisfied” and 10 being “very satisfied”, 11 participants rated their satisfaction with the Business LED Instant Rebate program as a 9.5 on average. While participants were also satisfied with the type of LEDs eligible for the discount, this component had the lowest average rating of 8.5, suggesting some room for improvement. The trade partners were also in agreement that customers are satisfied with the program. They pointed out that customers are specifically pleased with program-subsidized prices and not having to handle the verification, qualification, and paperwork processes.

Trade partners mentioned the LED Instant Rebate program’s simplicity, ease of use, and effectiveness; further, they noted that the program subsidies result in low upfront costs that effectively incent customers to install LEDs. Most LED Instant Rebate trade partners were not concerned about covering the upfront cost of LED discounts and waiting until they received reimbursement from the program. In addition, four of the seven LED Instant Rebate trade partner interviewees indicated it was easy to determine whether a customer is served by Xcel Energy using the online database managed by Ecova. However, a few reported issues with the address verification system.

Trade partners provided the following suggestions for the Instant Rebate program: add G24 lamps, LED bulbs that can replace 26-watt CFLs, T8 LEDs and shift four-foot LEDs and PL lamps over from the prescriptive program.

Recommendation #10: Consider offering a wider selection of LEDs through the LED Instant Rebate program, evaluating the impacts on program cost-effectiveness. trade partners

While participation barriers are limited, budget constraints, inadequate ROI, and limited knowledge of lighting technology may present hurdles.

Participating customers identified relatively few participation barriers—most (66 percent) reported experiencing no barriers to program participation. Those customers that perceived a hurdle to participation reported financial pressures or concerns about equipment compatibility or availability. In addition, nonparticipants rated performance concerns as most important (average of 8.8 on a scale of 0 to 10 where 0 is “not at all important” and 10 is “very important”) among their considerations for new equipment, followed by capital investment and initial purchase cost (both with average ratings of 8.7).

Trade partners also identified the following participation barriers: some noted that projects often return from preapproval with a smaller rebate than was expected (pointing back to concerns about the preapproval processes’ opaqueness), while others explained that budget constraints or ROI concerns prevent customers from moving forward.

Most trade partners use the program to increase the attractiveness of their projects by reducing upfront costs and increasing the ROI. While most trade partners agreed that the program serves both vendors and customers well, several reported navigating the downstream program on behalf of their clients because they thought customers would be intimidated or confused by the process, largely attributing this to customers' lack of awareness of lighting technologies.

Recommendation #11: Continue supporting contractors in their efforts to educate customers. Focus on improving customer-facing materials that help customers understand program processes and lighting technologies.

LEDs will continue to penetrate the commercial lighting market in the coming years, and the SBL program will be a pivotal factor.

The benchmarking activities revealed that the rapidly evolving lighting market poses a challenge for other programs. In addition, trade partners described how the Colorado market will trend heavily towards LEDs; further, nearly all trade partners anticipated that their companies' own sales of program-qualified LEDs would increase over the next two years. The trade partners also speculated that the program will play a significant role in the market transition to LEDs as, in their experience, the program already is a pivotal factor in customers' decision-making.

Over one-quarter of nonparticipating customers reported installing energy efficient lighting in the past two years (27 percent)—which indicates that some business customers implement energy efficient lighting on their own without assistance from Xcel Energy. However, an additional 32 percent of nonparticipants said they have *considered* installing energy efficient lighting, implying that the program may have the opportunity to influence their decision-making process.

Recommendation #12: Continue to push marketing to engage customers that are considering energy-efficient lighting, in particular LEDs.

Advanced lighting controls appear to be a future growth opportunity.

Xcel Energy currently includes lighting controls as part of its Energy Management Systems program; however, it will be promoting advanced lighting controls under the custom lighting program in the upcoming program year. One peer program manager believes that lighting controls are an opportunity to capture more savings and facilitate program expansion. In addition, trade partner interviewees also expressed enthusiasm for lighting controls, and some anticipated that lighting control sales will grow due to the energy savings opportunities as well as emerging energy code changes for new construction.

When asked how the program could target lighting controls, the trade partners offered several suggestions: boost general awareness through literature (e.g., brochures, advertisements, web), increase the rebate levels for lighting controls, add more variety to the lighting control options in the prescriptive product list, and—as the program is doing—find ways to integrate controls into the custom program. One peer program manager emphasized the importance of providing contractors with better education on the benefits of controls.



Recommendation #13: In addition to focusing on LEDs, follow through with the promotion of advanced lighting controls under the custom program. Once integrated, investigate how—if at all—controls could be included in the prescriptive track. In addition, educate trade partners on the benefits of advanced lighting controls.



1. INTRODUCTION

Xcel Energy is looking for meaningful ways to improve the elements of its demand side management (DSM) programs, its customer-reach capabilities, and the operation efficiency of their programs so that they can successfully meet program goals and objectives. To assist Xcel Energy in this aim, Xcel Energy selected through a competitive Request for Proposals (RFP) process a third party vendor (comprised of Tetra Tech and NMR Group—hereafter the “Tetra Tech team”) to conduct objective evaluations of their DSM programs in Minnesota and Colorado.

1.1 PROGRAM DESCRIPTION

Xcel Energy’s Small Business Lighting (SBL) program in Colorado provides customers with rebates and direct install services for energy-efficient lighting measures, including LEDs, fluorescents, and controls. Electric customers under 400kW in peak demand may participate in the program via four tracks: prescriptive rebate, custom rebate, direct install, and midstream LED Instant Rebate. Custom projects must be preapproved by Xcel Energy and participants must not have purchased the equipment prior to receiving preapproval. In contrast, prescriptive projects do not require preapproval and equipment must be purchased prior to submitting a rebate application. The LED Instant Rebate, which is implemented by Ecova, provides customers with point-of-sale discounts for eligible ENERGY STAR® LEDs available from participating distributors. In addition, customers are eligible for additional support provided by CLEAResult while those under 100kW in peak demand are also eligible for direct install services of LEDs and aerators. Both the instant rebate and direct install components were launched in 2015.

Xcel Energy’s program marketing is driven through two core mechanisms. First, the implementation contractor actively targets both trade partners and customers to encourage program participation. This outreach includes industry events, community outreach, newsletters, telephone calls and emails. Second, BSC staff communicate, typically on a reactive basis, with customers calling in to Xcel Energy. In addition, BSC staff also conduct proactive outreach on a regular basis to customers to solicit projects.

Trade partners play a key role in working with customers to submit program applications and also sell LEDs through the instant rebate program. Xcel Energy provides training to trade partners and updates trade partners about program changes and new opportunities.

1.2 EVALUATION METHODOLOGY

The Tetra Tech team conducted an evaluation of the Colorado SBL program in 2016. The process evaluation provides Xcel Energy with a thorough understanding of customer and trade partner awareness, satisfaction, attitudes and behaviors as well as benchmarked information for similar programs offered throughout the country. The evaluation’s net-to-gross calculations to estimate net energy savings employ triangulation methods for best estimates of program attribution.



The evaluation scope of work consisted of the following evaluation tasks:

- Task 1: Kick-off meeting—in person meeting between Tetra Tech team members and Xcel Energy staff to confirm evaluation researchable issues, activities, methods, and schedule.
- Task 2: Staff interviews—interviews with a total of five program staff regarding the Colorado SBL program, including the downstream product manager (one), LED Instant Rebate product manager (one), BSC energy efficiency specialist (one), program implementation contractor (one), and the LED Instant Rebate implementation contractor.
- Task 3: Customer research—140 participant surveys and 34 nonparticipant surveys.
- Task 4: Trade partner interviews—qualitative interviews with 15 trade partners and surveys with 18 influential vendors representing 21 projects.
- Task 5: Net-to-gross (NTG) research—NTG recommendation for future use based on research conducted for tasks 3, 4 and 6.
- Task 6: Peer utility benchmarking—secondary research on five other utility programs and in-depth interviews with staff at three utilities.
- Task 7: Progress reporting—biweekly status meetings to keep the evaluation on-task and engage Xcel Energy staff throughout the evaluation process.
- Task 8: Reporting—interim memo reports and discussion of results for tasks 2–6 as each task was completed, as well as draft and final reports, and a results meeting based on all evaluation research.

1.3 REPORT ORGANIZATION

Section 2 of this report synthesizes overall key findings across all of the evaluation activities. Sections 3 through 7 detail results from each of the evaluation activities as follows: staff interviews, customer research, trade partner interviews, net-to-gross research, and peer utility benchmarking.

2. SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

The Colorado SBL program is currently reaching its savings goals. The SBL program achieved savings goals in 2015, although fell short in 2014 due to the transition to a new implementation contractor as well as the elimination of T12 to T8 fluorescent measures. Because the market has rapidly evolved over the past several years due to the introduction of LEDs, the prescriptive and instant rebate tracks are challenged to keep abreast of new LED technologies and prices, and then set appropriate rebate levels.

The program's design is generally consistent with peer programs and the participating customers and trade partners have positive impressions of the program design. Research indicates that product offerings are reasonable and rebate amounts are adequate to encourage participation; however, there is opportunity for additions and refinement. Xcel Energy has a well-developed and coordinated DSM staffing infrastructure and program staff appear well-qualified and adequately supported to manage and promote the program.

The availability of the program is an important factor for participating customers in their decision-making processes, reflected in the high NTG ratios. On top of upfront costs, ROI, measure performance, and energy savings, customers strongly factor program measure eligibility and incentives into their decision-making processes.

While participation barriers are limited, some trade partners indicate that budget constraints, inadequate ROI, and limited knowledge of lighting technology may present hurdles for customers. Trade partners—who have an excellent understanding of the program participation process—are vital in helping customers select equipment and navigate the program application process. From the trade partner perspective, the custom participation track can be challenging to navigate, and the preapproval process can cause uncertainty regarding rebate amounts. Trade partners also observe some redundancies in program applications. Nonetheless, trade partners and customers are generally satisfied with their program experience.

LEDs will continue to penetrate the commercial lighting market in the coming years, and the SBL program will be pivotal in supporting that transition. Advanced lighting controls also are an important growth technology.

Specific key findings and recommendations from the evaluation are discussed below.

2.1 Net-To-Gross

The net-to-gross (NTG) research indicates high program attribution, although slightly lower than current program NTG assumptions.

To estimate program attribution, the evaluation team employed a triangulation or preponderance of evidence approach—an identified best practice in the industry for net savings—to recommend a NTG ratio for the program.

The evaluation team calculated NTG ratios using the self-report approach (SRA). The SRA NTG is based on quantitative surveys with recent participating customers, participating distributors, and influential vendors (trade partners identified by participating customers as

being influential in their decision-making process). The evaluation team further triangulated the calculated SRA NTG ratios with other sources of information to recommend NTG ratios for the SBL program that the team believes most accurately represents program attribution. The triangulation data sources include market transformation indicators from influential vendor surveys, in-depth interviews with trade partners, benchmarking review of NTG estimates of similar programs, nonparticipant installations of energy efficient equipment, and known program changes that may affect future attribution levels.

Using the self-report approach (SRA), the evaluation team calculated NTG ratios of 89 percent for the downstream rebate program (18 percent free-ridership and 7 percent spillover), 84 percent for the direct install channel (18 percent free-ridership and 3 percent spillover), and 92 percent for the LED Instant Rebate program (39 percent free-ridership and 31 percent spillover).

Findings from the triangulation research suggests that the calculated NTG ratio of 84 percent for the direct install channel from customer self-reports likely underestimates the program's influence on direct installations. The SRA NTG estimate of 84 percent is based on relatively limited sample (28 customer self-reports), and includes 18 percent overall free-ridership estimate with a precision-level of ± 9 percent at the 90 percent confidence level. The SRA results also found a free-ridership rate of 18 percent for the downstream rebate component, with a more robust participant sample. Considering that direct install measures are provided to customers free of cost and are directly installed by the program, all else equal, we would expect lower levels of free-ridership for direct install measures compared to rebated measures. In addition, the benchmarking research found NTG estimates for two peer small business direct install programs against which to benchmark the SBL program results, and both had higher evaluated NTG ratios. An evaluation of Duke's Small Business Energy Saver (SBES) program estimated a free-ridership rate of 4 percent, spillover of 0 percent, and therefore an overall NTG ratio of 96 percent. PECO's evaluation results for its Smart Business Solutions program resulted in 10 percent free-ridership, 0.2 percent spillover, and an overall NTG ratio of 90 percent.

With these considerations in mind, the evaluation team feels an upward adjustment to the calculated NTG ratio is warranted for the direct install channel, though the program's current planning estimate of 100 percent is likely too high based the customer self-report and benchmarking findings. Therefore, we recommend an upward triangulation adjustment of 6 percent to the calculated SRA NTG ratio for the direct install component, from 84 percent to 90 percent, based on an average of the SRA results and the two benchmarked programs' NTG estimates.

While the NTG research included estimation of participant and nonparticipant like-spillover effects through participant and vendor self-reports, quantification of additional possible market effects was not included within the scope of the evaluation. As a result, the recommended NTG ratios are conservative estimates of program attribution.

Recommendation #1: The evaluation team recommends NTG ratios for near future program years of 89 percent for downstream rebates, 90 percent for the direct install channel, and 92 percent for the LED Instant Rebate program.

2.2 PROGRAM DESIGN

The SBL program design is generally consistent with peer programs and well viewed by customers and trade partners.

The SBL program utilizes a combination of per-fixture rebates (LED Instant Rebate and prescriptive tracks) and kWh savings incentives (custom track). This is generally consistent with peer programs. Some peer programs have a midstream program under the umbrella of their prescriptive program (Duke Energy) or opted not to offer a midstream lighting program at all (PECO). Benchmarking interviewees identified direct install and simplified application processes as keys to success for their small business lighting programs. In addition, most SBL participants do not believe the program design requires substantial changes. Trade partner interviewees generally had positive impressions of the overall program design as well.

Xcel Energy offers a separate commercial refrigeration program that provides similar direct install measures as the SBL program as well as a few lighting measures for refrigeration applications. Because these two programs both serve similar customers with some overlap of measure offerings, there may be efficiency advantages to program integration. In addition, other program administrators offer comprehensive programs for small business customers that cover multiple technologies, including lighting, refrigeration, and water heating. Comprehensive programs operated by a knowledgeable implementation contractor can reduce customer confusion and be more adaptable as the lighting market evolves to offer smaller savings opportunities.

Recommendation #2: Consider the efficiency advantages to integrating the direct install components of the SBL and commercial refrigeration programs.

Product offerings are generally in line with peer programs and rebate amounts are adequate to encourage participation, yet there is opportunity for additions and refinement.

Because the lighting market has rapidly evolved over the past several years due to the introduction of LEDs, programs are challenged to keep abreast of new LED technologies and prices. Because LEDs provide the vast majority of program savings, the SBL prescriptive and instant rebate programs require up-to-date, accurate data on LED pricing in order to set appropriate rebate levels and prescriptive technical assumptions. In order to remain flexible, one peer program utilizes pre-approved lists from the Lighting Design Lab, the Design Lights Consortium, and ENERGY STAR® and also maintains a list of products sold in their region which have been approved during previous custom project applications. Since launching in early 2015, the LED Instant Rebate program, in particular, has achieved savings goals by—in the opinion of program staff—adapting to the market via the introduction of new models and adjusting discount levels.

A few LED Instant Rebate trade partners noted that rebate levels were dropping to mirror LED price trends and expressed concern that reduced rebates might discourage customers. Other downstream trade partners named certain products for which they hoped to see increased rebates, such as LED high-bay and exterior lighting, or higher rebates for more efficient products and lower rebates for less efficient products. However, both downstream

and LED Instant Rebate customer participants report satisfaction with the available rebate amounts.

LED Instant Rebate trade partners saw opportunities to add G24 LEDs to the program as replacements for 26-watt CFLs in large buildings. Trade partners also suggested adding T8 LEDs and moving four-foot LEDs and PL lamps from the prescriptive program to the LED Instant Rebate program.

Recommendation #3: Continue ongoing reviews of instant discount levels and leverage qualifying product lists to adapt to the ongoing market evolution. In addition, consider shifting more LEDs from the prescriptive to the LED Instant Rebate track.

2.3 PROGRAM ADMINISTRATION

Xcel Energy has a well-developed and coordinated DSM staffing infrastructure.

Xcel Energy's staffing structure has been key to the success of its DSM programs by facilitating both customer and trade partner outreach and engagement. Staff juggle multiple responsibilities, which can be demanding; however, Xcel Energy has demonstrated a commitment to identifying and addressing staffing needs as they arise. Recent examples include the re-organization of the BSC and the creation of the team lead position a few years ago.

Compared to other benchmarked programs, Xcel Energy has one of most robust DSM staffing infrastructures. At Xcel Energy, an inclusive team of staffers contribute to the success of the SBL program, including product managers, team leads, energy efficiency engineers, rebate processors, and BSC energy-efficiency specialists. In November 2016, Xcel Energy announced a re-organization to create a dedicated lighting team consisting of both Colorado and Minnesota staff. At Duke Energy, the program manager is the only Duke Energy staff member devoted exclusively to their Small Business program. Additional support staff work with multiple energy efficiency programs. At PECO and PSE, the interviewees described how they manage multiple programs, with support staff that manage each program individually.

Interviews and surveys did not point to any shortcomings when it came to program staff's capabilities of knowledge. In fact, trade partner interviewees referred to program staff as "immensely helpful" and "resourceful."

Recommendation #4: Maintain current internal communication processes and continue to ensure there are adequate resources to effectively administer program functions. Encourage staff to continue to expand their abilities to maintain the high level of support that they currently provide to trade partners and customers.

2.4 PROGRAM IMPLEMENTATION AND DELIVERY

The SBL program effectively leverages the efforts of the implementation contractor, trade partners, and the BSC to promote the program.

The primary source of marketing and leads for the peer utilities' small business lighting programs are their implementation contractors, similar to CLEAResult's role in the SBL

program. Xcel Energy markets the program to potential participants through two primary channels: CLEAResult and BSC. Xcel Energy staff also provides training and updates to trade partners, who are key partners in the program, to disseminate information to customers.

Less than one-third of the eligible nonparticipating customers (10 of 34) were aware of the SBL program. However, trade partner interviewees observed an increase in customer awareness of the SBL program over the past year (September 2015 through August 2016), attributing it to customers' growing awareness of rebate programs and Xcel Energy's active promotion. Trade partners attributed this increase to the program's promotional efforts, although all 15 trade partner interviewees reported that they introduce the program to their customers as well.

Email appears to be the preferred method of communication, as nearly two-thirds of participants (64 percent) prefer to receive information about Xcel Energy's programs via email. Among nonparticipant customers, email was also the most preferred method for receiving information from Xcel Energy (61 percent).

Recommendation #5: Continue promoting the program in order to reach customers who are unaware of the program and encouraging trade partners to promote the program to their clients. Prioritize direct engagement between Xcel Energy and the customer when communicating program details to customers—email may be the best channel for establishing this connection.

Trade partners' understanding of program processes is a vital element of program implementation and delivery.

According to program staff, trade partners play a key role in working with customers to submit program applications and also sell LEDs through the instant rebate program. Trade partners reported a good understanding of the program processes, as well as the decision-making process for directing a project to the custom, prescriptive, or LED instant rebate tracks. Trade partners agreed that no changes were necessary to further simplify this decision-making process.

Trade partners reported a strong understanding of which products are program-eligible; however, customers are often confused by the distinction. More than one-half of participating customers received assistance completing the application from outside of their organization, primarily from the equipment vendor, distributor, or contractor. Indeed, many trade partners reported navigating the application process on behalf of their customers.

Xcel Energy provides training to trade partners and updates trade partners about program changes and new opportunities. Xcel Energy is also evaluating launching a comprehensive website with program resources for trade partners. Trade partners were pleased with the program support they receive and their program interactions—they consider program and rebate updates the most important information and are satisfied by the support in this area.

Recommendation #6: Continue developing relationships with and communicating with trade partners to ensure a positive and smooth customer experience. Leverage both CLEAResult and the trade partner newsletters and continue to make Xcel Energy representatives available to assist trade partners with customers.

The custom participation track can be challenging to navigate, and the preapproval process can cause uncertainty.

Overall, the prescriptive and instant rebate tracks are easier to navigate than the custom track and are often preferred by the trade partners due to the relative simplicity of the application process. However, program staff indicated that the custom preapproval process was opaque and therefore a source of uncertainty for both participants and trade partners. Some downstream trade partners suggested making the custom application more transparent and offering tools to help them calculate the rebate themselves, citing lower-than-anticipated rebates as the common deterrent for customers who received custom preapproval but did not apply for program rebates.

Some trade partners also indicated the application process seemed redundant if they participated in more than one track and were required to fill out each application in its entirety. PECO's Smart Energy Solutions program has addressed this concern as customers can transfer information between applications.

Recommendation #7: Consider ways to simplify the custom application and improve the transparency of custom rebate calculations to trade partners and participants, if possible.

Recommendation #8: Allow for information transfer between prescriptive and custom applications or consider integrating them into a single application, if feasible.

2.5 MARKET RESPONSE

Trade partners and customers are satisfied with the downstream program experience.

Downstream participants were pleased with the program because of the customer service they received from both Xcel Energy and the trade partners. In addition, they were most satisfied with the amount of time required for custom project preapproval and time to receive rebates (average ratings of 8.8 each on a 0 to 10 scale, with 0 being "very dissatisfied" and 10 being "very satisfied") and the rebate amount (8.7). Participants were also pleased with Xcel Energy overall, and, on average, report that they are more likely to recommend Xcel Energy to a friend or colleague than nonparticipants (average ratings of 9.0 and 7.2 out of 10, respectively).

Trade partners were particularly pleased by the increase in LED sales that they saw from participating and their customers' satisfaction with the program. Their preferences for Xcel Energy's program over other utility programs was due to the competitive rebate levels and knowledgeable program staff. Nearly all believed that the program has increased the size and/or number of their lighting projects.

Recommendation #9: Continue offering competitive rebate levels, useful tools, and strong customer service.

The LED Instant Rebate program received a favorable response from participants and trade partners.

Participants are very satisfied with the LED Instant Rebate program. On a 0 to 10 scale, with 0 being “very dissatisfied” and 10 being “very satisfied”, 11 participants rated their satisfaction with the Business LED Instant Rebate program as a 9.5 on average. While participants were also satisfied with the type of LEDs eligible for the discount, this component had the lowest average rating of 8.5, suggesting some room for improvement. The trade partners were also in agreement that customers are satisfied with the program. They pointed out that customers are specifically pleased with program-subsidized prices and not having to handle the verification, qualification, and paperwork processes.

Trade partners mentioned the LED Instant Rebate program’s simplicity, ease of use, and effectiveness; further, they noted that the program subsidies result in low upfront costs that effectively incent customers to install LEDs. Most LED Instant Rebate trade partners were not concerned about covering the upfront cost of LED discounts and waiting until they received reimbursement from the program. In addition, four of the seven LED Instant Rebate trade partner interviewees indicated it was easy to determine whether a customer is served by Xcel Energy using the online database managed by Ecova. However, a few reported issues with the address verification system.

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Most trade partners use the program to increase the attractiveness of their projects by reducing upfront costs and increasing the ROI. While most trade partners agreed that the program serves both vendors and customers well, several reported navigating the downstream program on behalf of their clients because they thought customers would be

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When asked how the program could target lighting controls, the trade partners offered several suggestions: boost general awareness through literature (e.g., brochures, advertisements, web), increase the rebate levels for lighting controls, add more variety to the lighting control options in the prescriptive product list, and—as the program is doing—find ways to integrate controls into the custom program. One peer program manager emphasized the importance of providing contractors with better education on the benefits of controls.

Recommendation #13: In addition to focusing on LEDs, follow through with the promotion of advanced lighting controls under the custom program. Once integrated, investigate how—if at all—controls could be included in the prescriptive track. In addition, educate trade partners on the benefits of advanced lighting controls.

3. PROGRAM STAFF INTERVIEWS

This section provides high-level findings from internal staff interviews.

3.1 INTRODUCTION

The evaluation team interviewed a total of five staff regarding the Colorado Small Business Lighting program, including the downstream product manager (one), LED Instant Rebate product manager (one), BSC energy efficiency specialist (one), program implementation contractor (one), and the LED Instant Rebate implementation contractor (one).

Staff interviews were conducted over a four-week period in April and May of 2016. The interviews covered a variety of issues, including:

- Roles and responsibilities of the staff
- Communication and interaction with others in the program
- Program design and resources to support the program
- Program marketing efforts
- Program operations
- Areas where the programs are working well and opportunities for improvements
- Past, current, and future challenges for the program(s)
- Key researchable questions for the evaluation.

The interviews provided a considerable amount of rich and detailed information that helped to shape program evaluation activities.

3.2 KEY FINDINGS

Next, we summarize the key findings from the internal review and interviews with program staff, followed by key researchable questions identified for the evaluation.

3.2.1 DSM infrastructure

Xcel Energy has a well-developed and coordinated DSM staffing infrastructure. This staffing structure has been key to the success of its DSM programs by facilitating both customer and trade partner outreach and engagement. Staff juggle multiple responsibilities, which can be demanding; however, Xcel Energy has demonstrated a commitment to identifying and addressing staffing needs as they arise. Recent examples include the re-organization of the BSC and the creation of the team lead position a few years ago.

Xcel Energy identified several key internal staff that support Xcel Energy's DSM programs for the internal interviews—including product managers, product developers, team leads, marketing assistants, energy efficiency engineers (EEEs), channel managers, account managers, and BSC energy efficiency specialists. While most DSM functions are performed internally, Xcel Energy also contracts with third-party implementation firms to perform specific functions for select programs.



Product managers oversee each program and are responsible for their program design and goals, monitoring goals, developing contingency plans, and pursuing effective marketing and communication strategies. For the business program portfolio, marketing assistants support product managers and interact with energy efficiency engineers, account managers and the BSC, trade partners, and customers during the project preapproval and approval processes.

Team leads are designated for each program group in order to specifically focus on strategies for a particular program type and monitor their performance. Team leads work with the product managers and then directly report to the marketing managers. Marketing managers report to a director on strategy and policy directions for the DSM programs.

Energy efficiency engineers are responsible for technical reviews, preapprovals of custom measures, and program energy savings calculations. Account Managers are the first point of contact for managed accounts as well as a conduit between managed customers and the marketing and program teams. Rebate processors complete program documentation to ensure the customer receives their rebate.

In 2010, Xcel Energy reorganized their BSC to include energy-efficiency specialists, whose main focus is to promote energy-efficiency programs to non-managed customers. They were trained specifically on energy efficiency and Xcel Energy's program offerings. These energy-efficiency specialists conduct direct marketing to customers as well as field questions and assist customers and trade partners in filling out their applications. Additionally, customer-service centered BSC representatives handle a wide variety of customer service tasks and are an additional point to which customers can be funneled into Xcel Energy programs.

Channel managers oversee the relationships between the DSM programs and trade partners or vendors. Channel managers identify and train new trade partners as well as work with established vendors and distributors to market Xcel Energy's DSM programs. For the business program portfolio, channel managers also engage trade partners in Advisory Councils that meet periodically to provide advice and input on Xcel Energy's DSM programs.

Finally, DSM regulatory affairs staff interface with the states' Public Utilities Commissions and related stakeholders to ensure that the programs are in compliance with the regulatory framework.

Xcel Energy has established tracking systems that assist in tracking and monitoring of the programs. In 2012, the DSM program tracking system was transitioned to Salesforce to provide increased functionality for DSM staff to manage and implement the programs. All program activity is entered into Salesforce as soon as leads are identified through to when the rebate check is sent to the customer and the project is closed.

Next, we summarize the key findings from the internal review and interviews with program staff, as well as key researchable questions identified for the evaluation, for each specific program.

3.2.2 Program design and operations

Xcel Energy's Small Business Lighting program in Colorado provides customers with rebates and direct install services for energy-efficient lighting measures, including LEDs, fluorescents, and controls. Electric customers under 400kW in peak demand may participate in the program via four tracks: prescriptive rebate, custom rebate, direct install, and midstream LED Instant Rebate. Custom projects must be preapproved by Xcel Energy and participants must not have purchased

the equipment prior to receiving preapproval. In contrast, prescriptive projects do not require preapproval and equipment must be purchased prior to submitting a rebate application. The LED Instant Rebate, which is implemented by Ecova, provides customers with point-of-sale discounts for eligible ENERGY STAR® LEDs available from participating distributors. In addition, customers are eligible for additional support provided by CLEAResult while those under 100kW in peak demand are also eligible for direct install services of LEDs and aerators. Both the instant rebate and direct install components were launched in 2015.

Xcel Energy's program marketing is driven through two core mechanisms. First, the implementation contractor actively targets both trade partners and customers to encourage program participation. This outreach includes industry events, community outreach, newsletters, telephone calls, and emails. Second, BSC staff communicate, typically on a reactive basis, with customers calling in to Xcel Energy. In addition, BSC staff also conduct proactive outreach on a regular basis to customers to solicit projects.

Trade partners play a key role in working with customers to submit program applications and also sell LEDs through the instant rebate program. Xcel Energy provides training to trade partners and updates trade partners about program changes and new opportunities.

The SBL program achieved its savings goals in 2015, although fell short in 2014 due to the transition to a new implementation contractor as well as the elimination of T12 to T8 fluorescent measures. Because the market has rapidly evolved over the past several years due to the introduction of LEDs, the prescriptive and instant rebate tracks are challenged to keep abreast of new LED technologies, prices, and then set appropriate rebate levels.

3.2.3 Areas working well

Interviews with program staff identified the following areas that are working well within the program:

- *The free audit and direct install service operates smoothly.* Program staff indicate that the new direct install component appears to provide valuable services to both trade partners and customers in an under-served sector of the market.
- *The midstream LED Instant Rebate program has been successful.* Since launching in early 2015, the LED instant rebate program has achieved savings goals by adapting to the market via the introduction of new models and adjusting discount levels.
- *The program is delivering a high level of technical assistance to customers.* Working together, Xcel Energy, CLEAResult, and trade partners provide a comprehensive support service to small business customers in order to facilitate their program participation.

3.2.4 Opportunities for improvement or additional research

Program staff identified the following opportunities for improvement or additional research:

- *Overlap in measures and target markets with the commercial refrigeration program.* Xcel Energy offers a separate commercial refrigeration program that provides the same direct install measures as the SBL program as well as a few common lighting measures for refrigeration applications. The two programs both serve similar customers with some overlap of measure offerings, so there may be efficiency advantages to program integration.

- *The rapidly evolving LED market.* Because LEDs provide the vast majority of program savings, the prescriptive and instant rebate programs require up-to-date, accurate data on LED pricing in order to set appropriate rebate levels and prescriptive technical assumptions.
- *The custom project preapproval process can be opaque and lengthy.* The custom preapproval process is not transparent to trade partners and customers, as there is a lack of certainty about both project approval and rebate amounts. In addition, the review process can take longer than desired, in particular for projects with an aggressive schedule.

3.3 KEY RESEARCHABLE QUESTIONS

The staff interviews identified a number of researchable questions for the evaluation, as summarized in the table below.

Table 3-1. CO Small Business Lighting Researchable Questions Identified During Internal Review

Researchable Question	Evaluation Activity				
	Trade Partner Interviews	Customer Surveys	Peer Utility Benchmarking	NTG Research	Onsite Audits
What can Xcel Energy learn from other utilities? How do Xcel Energy's custom, prescriptive, direct install and instant rebate structures compare to other utilities across the nation?			•		
How do other utility programs keep up with the rapidly evolving LED market?			•		

Researchable Question	Evaluation Activity				
	Trade Partner Interviews	Customer Surveys	Peer Utility Benchmarking	NTG Research	Onsite Audits
How do other utilities organize their small business programs – technology-specific or comprehensive? How do they avoid overlapping measures and customer segments?			•		
How are the new midstream LED and direct install components performing? What are the opportunities for expansion?	•	•	•		
What are customer and trade barriers to participation?	•	•			
Are current measure eligibility and other requirements clear to trade partners and customers?	•	•			
How do trade partners perceive the program? What additional support, if any, is needed?	•				
How satisfied are customers with the program? How can the program improve the customer participation experience?		•			

Researchable Question	Evaluation Activity				
	Trade Partner Interviews	Customer Surveys	Peer Utility Benchmarking	NTG Research	Onsite Audits
What level of influence does the program have on customers' decision to purchase/install measures? What is the extent of free-ridership?	•	•		•	
Is the program influencing customers to implement energy-saving actions beyond the savings that can be claimed by Xcel Energy?	•	•		•	
How does Xcel Energy's custom analysis and approval processes compare to industry standards and peer utilities?			•		
What is the prevalence of different types of lighting technologies currently installed in small businesses within Xcel Energy's CO service territory?					•



4. PARTICIPANT AND NONPARTICIPANT CUSTOMER RESEARCH

This section presents the process results from 140 participant and 34 nonparticipant customer surveys conducted as part of the evaluation of Xcel Energy's CO Small Business Lighting program.

4.1 INTRODUCTION

As part of the evaluation of the Colorado Small Business Lighting programs, the evaluation team conducted phone interviews with participating and eligible nonparticipating business customers. Below we provide background of each survey effort, followed by key findings and detailed results.

4.1.1 Participant customer survey

The Tetra Tech team received the 2015–2016 participant project tracking data for the CO Small Business Lighting program from Xcel Energy on May 23, 2016.¹ The evaluation team received a separate file containing participant contact information and firmographic information on June 2, 2016.² For the purposes of the participant survey, participants were defined as those participating in the program between January 2015 and May 16, 2016. The participant surveys focused on sources of program awareness, customer experiences with the program, participant decision-making processes, program satisfaction, and key participant characteristics.

Table 4-1 shows the number of premises in the participant sample frame and the number of completed surveys by sample strata. Overall, the evaluation team completed 140 surveys at the premise level with 133 unique participant customer respondents. Several customer respondents were responsible for multiple premises or projects in the participant sample.

Table 4-1. Participant Customer Survey Summary

Strata	Number of Premises in Population*	Target Completed Surveys	Actual Completed Surveys
Prescriptive	567	60	76
LED	445	39	57
Fluorescent	75	6	11
Controls	45	15	8
Custom	260	30	18
Direct Install	267	25	28
LED instant rebate	1,040	25	18
Overall	1,676	140	140

*Counts sum to greater than total because customers can participate in multiple strata.

¹ Filename: CO Small Business Lighting.csv.

² Filename: CO - Small Business Lighting Participants.csv.

Interviews were conducted over a three week period in August 2016. Participant surveys were implemented through Tetra Tech’s in-house computer-assisted telephone interview (CATI) lab. Advance letters were mailed on Xcel Energy letterhead to sampled participants the week prior to beginning phone calls.

4.1.2 Nonparticipant customer survey

The evaluation team conducted a general population survey of eligible Colorado business customers (<400 kW) who have not participated in the Small Business Lighting program in the past five years. Xcel Energy provided eligible nonparticipant customer data to the Tetra Tech team on July 1, 2016³. The evaluation team first reviewed the nonparticipant files provided by Xcel Energy to remove duplicate account numbers, premise IDs, and phone numbers to ensure businesses were only contacted once for the nonparticipant survey effort. Customers with a kW peak demand <400 kW were deemed small business program-eligible customers and the target respondent for this effort.

Table 4-2 below shows the number of premises in the nonparticipant sample frame and the number of completed surveys. The Tetra Tech team sampled a random sample of nonparticipant business accounts sufficient to complete 34 nonparticipant surveys in Colorado.

Table 4-2. CO Nonparticipant General Population Survey Sample

Stratification	Number of Premises in Population	Target Completed Surveys	Actual Completed Surveys
Colorado business nonparticipants (<400 kW)	55,932	35	34

The nonparticipant survey included questions about various program awareness and communications, likelihood for future participation, customers’ energy efficiency and support needs, decision-making processes, and customer demographics. Interviews were conducted over a four week period in July and August 2016 through Tetra Tech’s in-house computer-assisted telephone interview (CATI) lab.

4.2 KEY FINDINGS

Below are key process findings from the participant and nonparticipant customer surveys in the following topic areas: program design, program implementation and delivery, and market response.

4.2.1 Program design

- *Participants identify relatively few participation barriers.* Most program participants (66 percent) report experiencing no barriers to program participation. Those participants that perceived a hurdle to participation reported financial pressures or concerns about equipment compatibility or availability.

³ Filename: MN Business Non Participants.csv.

- *Overall, participants are satisfied with the program design.* Small Business Lighting program participants were satisfied overall at the amount of time required for custom project preapproval and to receive rebates (average ratings of 8.8 each on a 0 to 10 scale, with 0 being “very dissatisfied” and 10 being “very satisfied”) and the amount of the rebate (8.7). LED Instant Rebate participants, on the other hand, were most satisfied by the rebate amount (9.6) and least satisfied with the types of LEDs eligible for the program (8.5).
- *Most participants do not believe the program requires substantial changes, although others provided suggestions.* Participants who participated in the prescriptive track were generally more satisfied with the program than those who participated in the custom track, which has a more complex application process. While over one-half of respondents did not believe the program requires any changes, some respondents suggested adding more eligible products, higher rebates and more follow-up outreach.
- *Lighting remains among the most common end-uses considered by small business customers for energy efficiency upgrades.* Energy efficient lighting was the most commonly mentioned upgrade implemented or considered by nonparticipants in the past two years, reported by nearly 60 percent of respondents. Over one-quarter of respondents reported installing energy efficient lighting in the past two years (27 percent), and an additional 32 percent of respondents said they have considered installing energy efficient lighting.
- *Program measure-eligibility requirements and incentives directly address key decision-making factors for small businesses when considering equipment upgrades.* When asked to rate the level of importance of various business factors when considering new equipment, nonparticipants rated performance concerns highest (average of 8.8 on a scale of 0 to 10 where 0 is “not at all important” and 10 is “very important”), followed by capital investment and initial purchase cost (both with average ratings of 8.7). Incentivizing high quality DLC⁴ and ENERGY STAR®-qualified bulbs works to overcome these potential decision-making barriers.

4.2.2 Program implementation and delivery

- *Participants are generally satisfied with program delivery, although feedback suggests there may be opportunities to clarify program information.* Xcel Energy disseminates program information directly to customers and/or participating vendors, although some participants are confused by program offerings or eligibility requirements, suggesting there may be potential to improve the clarity of program requirements and ensure program vendors are delivering adequate and up-to-date information.
- *Satisfaction with CLEAResult services is high.* Respondents who received assistance from CLEAResult were satisfied with the services received, rating each service from 8.7 to 9.4 on average.

4.2.3 Market response

- *Participants are pleased with the Small Business Lighting and Business LED Rebate programs.* Downstream participants are most pleased with the customer service they

⁴ DesignLights Consortium (DLC).

received from both Xcel Energy and the trade partner partners, and LED Instant Rebate participants were most satisfied with the rebates received and the performance of the LEDs. Participants are also pleased with Xcel Energy overall, and, on average, report that they are more likely to recommend Xcel Energy to a friend or colleague than nonparticipants (average ratings of 9.0 and 7.2 out of 10, respectively).

- *Participants saw many benefits to program participation.* Nearly 80 percent of downstream participants named energy efficiency as a key benefit realized as a result of participation, and 42 percent cited better equipment performance. However, 7 percent did not report a benefit from program participation.
- *Small business customers look to Xcel Energy as a primary source for information on energy efficiency.* Over two-thirds of respondents (70 percent) said they would seek out Xcel Energy in some form, either through the website or an Xcel Energy representative, if considering implementing or installing new energy efficient equipment.

4.3 PARTICIPANT SURVEY RESULTS

Next, we present detailed process results from the participant customer survey. In Colorado, the evaluation team surveyed 126 sites that had participated in the Small Business Lighting program (121 unique respondents) and fourteen sites that had participated in the Business LED Instant Rebate program (11 unique respondents).

For survey questions that are specific to individual premises, results are presented at the premise level. Some survey questions, however, are focused on the respondent, and in the case of customers with multiple projects, would not generally vary by location or premise (e.g., source of program awareness). Results to these types of questions are presented at the respondent level instead of the premise level.

4.3.1 Source of program information

As shown in Table 4-3, most participants learned about Xcel Energy business lighting programs from an equipment vendor or contractor (42 percent) or an Xcel Energy account manager, representative, or staff member (23 percent). Participants also reported learning about the program through an Xcel Energy mailing (12 percent) or e-mail (12 percent).

Table 4-3. Source of Program Information

Source of Program Information	Percent
From an equipment vendor or contractor	42%
Xcel Energy account manager, representative, or staff	23%
Mailing from Xcel Energy	12%
E-mail	12%
Previous experience with an Xcel Energy program	8%
Xcel Energy website	5%
From a colleague or coworker at my company	5%
CLEAResult	4%
Word of mouth from other industry contacts	4%

Source of Program Information	Percent
From a city representative or event	4%
Another online resource (not Xcel Energy)	3%
Article in a newspaper, magazine, or newsletter	3%
Don't know	3%
Other	8%
Respondents (n)	132*

* Multiple responses permitted.

A majority of participants (64 percent) prefer to receive information about assistance available through Xcel Energy's energy efficiency programs by e-mail in the future (Table 4-4). Besides e-mail, participants demonstrated a desire to learn about programming directly from Xcel Energy, whether by phone (7 percent), a representative (6 percent), mailing (5 percent), or website (3 percent).

Table 4-4. Preference for Program Communication

Source of Program Information	Percent
E-mail	64%
Phone call	7%
Xcel Energy rep or staff member	6%
Mailing from Xcel Energy	5%
Xcel Energy website	3%
From a colleague or coworker at my company	2%
Don't know	5%
Other	8%
Respondents (n)	132*

* Multiple responses permitted.

One-third (30 percent) of all participants reported previously participating in an Xcel Energy program (Table 4-5). Almost forty percent of these respondents participated in an Xcel Energy lighting program, while approximately ten percent had participated in a solar program, HVAC program, or an energy audit. Some participants had previously been involved in multiple Xcel Energy programs (16 percent).

Table 4-5. Previous Program Participation

Previous Program Participation	Percent
Lighting	39%
Solar	11%
Energy audit	11%
HVAC	8%
Multiple programs	16%
Other	13%
Don't know	3%
Respondents (n)	38

4.3.2 Application process

More than one-half of all participants in the Small Business Lighting program received assistance on the program application from outside of their organization (Table 4-6). Most of the assistance was provided by the equipment vendor, distributor, or contractor (44 percent), with some assistance from Xcel Energy and CLEAResult (4 percent each).

Table 4-6: Application Completion

Who Completed the Program Application	Percent
Equipment vendor/distributor/contractor	44%
Respondent	40%
Someone else at respondent's organization	21%
CLEAResult	4%
Other Xcel Energy program	3%
Xcel Energy Business Services Center rep	1%
Other	3%
Don't know	7%
Respondents (n)*	117

* Multiple responses permitted.

Among the 69 participants who reported that the application was completed by the respondent and/or by someone else at the respondent's organization (from Table 4-6 above), 31 participants (45 percent) required assistance from the equipment vendor, Xcel Energy, or CLEAResult staff. These participants most commonly needed assistance reviewing or completing the application before submission or had questions about general specifications (39 percent). One in ten participants needed assistance determining the rebate amount or the types of equipment which qualified for the program (Table 4-7).

Table 4-7. Types of Application Assistance Needed

Application Assistance Needed	Percent
Entire application or application review	39%
General specifications	39%
Determine if equipment qualified for the program	10%
Determine rebate amount	10%
Business type classification	3%
Don't know	23%
Respondents (n)*	31

* Multiple responses permitted.

Small Business Lighting program participants were asked about the type of assistance provided by the program implementation contractor CLEARResult (Table 4-8). One-third of participants reported CLEARResult conducted a free lighting assessment and another third indicated CLEARResult assisted them in program participation. CLEARResult also provided a follow-up assessment report with recommendations and helped evaluate the financial feasibility of the project for one in four participants (26 percent and 24 percent, respectively).

Table 4-8. Assistance Provided by CLEARResult

Assistance Type	Percent
Conduct a free lighting assessment	33%
Assist you in participating in the program	33%
Provided a follow-up assessment report with recommendations	26%
Help evaluate the financial feasibility of the project	24%
Facilitate the selection of an installation contractor	14%
Other type of assistance	13%
None of these	37%
Don't know	12%
Respondents (n)	117

Respondents who received assistance from CLEARResult were asked to rate their satisfaction using a 0 to 10 scale, with 0 being "very dissatisfied" and 10 being "very satisfied" (Table 4-9). Overall, the satisfaction for each category was high, ranging from 8.7 to 9.4 on average.

Table 4-9. Satisfaction with CLEARResult Assistance

Satisfaction Levels	n	Mean	Percent 0 to 5	Percent 6 to 8	Percent 9 or 10
The free lighting assessment	39	9.4	0%	18%	82%
The assistance with program participation	39	9.0	3%	31%	67%

Satisfaction Levels	n	Mean	Percent 0 to 5	Percent 6 to 8	Percent 9 or 10
The lighting assessment report with recommendations	31	9.3	0%	26%	74%
The evaluation of financial feasibility	25	9.0	1%	7%	17%
The selection of an installation contractor	15	8.7	1%	6%	8%
Other various types of assistance	15	9.3	0%	4%	11%

4.3.3 Participation experience and customer satisfaction

A. LED Instant Rebate program satisfaction and participation benefits

Nine out of 11 LED Instant Rebate respondents indicated they learned about the program before making the decision to purchase program-qualifying LEDs, while two respondents said they did not learn about the program discount until after deciding to purchase LEDs.

Business LED Instant Rebate program participants are satisfied with the program and Xcel Energy overall (Table 4-10). On a 0 to 10 scale, with 0 being “very dissatisfied” and 10 being “very satisfied”, participants rated their satisfaction with the Business LED Instant Rebate program a 9.5 on average. Participants praised their organization’s working relationship with Xcel Energy, the ease and convenience of the application process, and the energy savings from the program. As one respondent noted, “[the program] forced me to examine the lighting used in the business – it was good for the environment and good for the business.” One participant, however, expressed concern that information about the program was not easily available, and another participant had a negative experience after accidentally purchasing non-eligible LEDs and failing to receive a rebate.

Business LED Instant Rebate participants rated their satisfaction with Xcel Energy an 8.4 on average. When asked if the respondent’s experience with the LED Instant Rebate program changed their overall satisfaction with Xcel Energy, seven out of eleven participants reported an increase in their overall satisfaction, while four participants reported no change.

Participants rated both their satisfaction with the amount of the LED price discount and the performance of the LED bulbs as a 9.6 on average. One participant was pleased that the bulbs were exchanged and re-installed free of charge after the bulbs initially failed. Participants were also satisfied by the amount of energy savings (8.9 on average), as well as the type of LEDs eligible for the discount, although this component had the lowest average rating of 8.5, suggesting some room for improvement.

Table 4-10. Xcel Energy Business LED Instant Rebate Program Satisfaction Mean Ratings

Satisfaction Levels	n	Mean	Count 0 to 5	Count 6 to 8	Count 9 or 10
The Xcel Energy Business LED Instant Rebate program overall	11	9.5	1	0	10
Xcel Energy overall	11	8.4	0	6	5
Business LED Instant Rebate program components					
The amount of the LED price discount	11	9.6	0	0	11

Satisfaction Levels	n	Mean	Count 0 to 5	Count 6 to 8	Count 9 or 10
The performance of the LED bulbs	11	9.6	0	2	9
The amount of energy savings you've seen since installing the LED bulbs	11	8.9	0	4	5
The type of LEDs eligible for the discount	11	8.5	1	3	7

B. *Small Business Lighting program participation benefits and satisfaction*

Overall, participants are satisfied with the Small Business Lighting program, the participation experience, and the benefits the program affords. Participants named reduced energy costs (78 percent) and better equipment performance (42 percent) as the primary benefits of participation (Table 4-11). Only 7 percent of the participants reported realizing no benefits as a result of program participation.

Table 4-11. Benefits Company Realized as a Result of Participation

Benefits	Percent
Reduced energy costs	77%
Better equipment performance	42%
No benefits	7%
Reduced maintenance time	6%
Positive public relations	4%
Environmental protection	3%
Increased profits	2%
Staff engagement	2%
Better understanding of energy efficiency	2%
Other	10%
Don't know	3%
Respondents (n)*	117

* Multiple responses permitted.

Using a 0 to 10 scale, with 0 being “very dissatisfied” and 10 being “very satisfied”, Small Business Lighting participants were asked to rate their satisfaction with Xcel Energy, the Small Business Lighting program, and a series of individual Small Business Lighting program components (Table 4-12). Participants provided high ratings for Xcel Energy overall and the Small Business Lighting program (8.4 and 8.9 respectively).

In addition, participants are highly satisfied with the individual components of the Small Business Lighting program. The highest average satisfaction rating was given to “the contractors who installed or implemented the energy efficient equipment” (9.3), while the lowest average satisfaction rating was given to “the amount of energy savings seen since project completion” (8.3).

Participants who rated these components a 5 or lower were asked to provide more detail. One respondent replied, “I just haven’t seen the savings. I was expecting a 20 to 25 percent drop in our bill, but it only dropped 8 to 10 percent.” Three respondents reported dissatisfaction with the amount of time it took to receive the rebate. One of the dissatisfied respondents noted “it took several weeks and multiple trips to our vendor to get the rebate check.”

Table 4-12. Xcel Energy Small Business Lighting Program Satisfaction Mean Ratings

Satisfaction Levels	n	Mean	Percent 0 to 5	Percent 6 to 8	Percent 9 or 10
The Xcel Energy Small Business Lighting program overall	116	8.9	4%	27%	69%
Xcel Energy overall	117	8.4	5%	41%	54%
Small Business Lighting program components					
The contractor who installed or implemented the energy efficient equipment	102	9.3	3%	15%	82%
The program’s handling of your questions or concerns	95	8.9	6%	23%	71%
The clarity of the products eligible for the program	71	8.8	1%	32%	66%
The type of products installed by the program at no charge during the assessment	28	8.8	7%	25%	68%
The program application process	98	8.8	4%	29%	67%
The amount of time it took to receive preapproval for the project	20	8.8	5%	35%	60%
The amount of time it took to receive the rebate	81	8.8	4%	37%	59%
The performance of the products installed by the program at no charge during the assessment	28	8.7	7%	29%	64%
Requirements for equipment eligibility	105	8.7	9%	30%	62%
The clarity of the program’s terms and conditions	105	8.7	7%	32%	61%
The amount of the rebate	90	8.7	3%	38%	59%
The type of equipment or improvements eligible for the program	112	8.5	6%	36%	58%
The amount of energy savings you’ve seen since the project completed	88	8.3	8%	41%	51%

In general, participants in both the prescriptive and custom tracks are highly satisfied with the Small Business Lighting program (Table 4-13). Participants in the prescriptive track are slightly more satisfied with the program application process (9.0 on average) than custom track participants (8.5), a difference that might be attributed to the more complex requirements of the custom application processes.

Table 4-13. Average Satisfaction Ratings: Prescriptive vs. Custom Tracks

Satisfaction Levels	Prescriptive		Custom	
	Respondents (n)	Mean Rating	Respondents (n)	Mean Rating
Xcel Energy Small Business Lighting program overall	73	9.3	21	9.0
The clarity of the products eligible for the program	71	9.1	4	8.8
The program application process	64	9.0	19	8.5
Requirements for equipment eligibility	68	8.8	20	9.1
The type of equipment or improvements eligible for the program	71	9.0	20	8.8

When asked whether their experience with the program changed their overall satisfaction with Xcel Energy, almost two-thirds (63 percent) of Small Business Lighting participants reported an increase in their satisfaction and one-third (34 percent) reported no change. Only two participants indicated that participation in the program led to a decrease in satisfaction with Xcel Energy.

Respondents were also asked which aspects of the Small Business Lighting program, if any, would they change (Table 4-14). Over one-half (56 percent) of respondents replied that they would not change anything. Several respondents (8 percent) requested that the program include additional types of equipment and some respondents (7 percent) would like to see Xcel Energy increase the rebate level.

Table 4-14. Aspects of the Program to Change

Proposed Changes	Percent
No change	56%
Include additional types of equipment	8%
Increase the rebate level	7%
Include a follow-up	6%
Increase program awareness	4%
Simplify the program application process	3%
Speed up the rebate processing	2%
Give more detailed instructions or examples on application/form	2%
Have completely web-based/online process	1%
Other	11%
Respondents (n)	117

4.3.4 Participation barriers

Small Business Lighting program participants were asked about the hurdles they faced when deciding whether or not to implement measures through the program. Two-thirds of the respondents reported that they did not face any barriers during the decision-making process (Table 4-15). Of those that did face barriers, about one-third reported financial factors as a barrier. Additionally, 23 percent mentioned concerns about time (e.g., management time, approval time, or application process).

Table 4-15. Measure Implementation Decision-making

Barriers	Percent
No barriers	66%
Lack of funds available for investment	4%
Equipment compatibility	3%
Other priorities for capital spending	3%
Amount of management time to oversee projects	3%
Incremental cost for more efficient equipment higher than we expected	3%
Unsure of energy savings potential	2%
Internal approval lead time	2%
Equipment availability	2%
Economy	1%
Upper management doesn't see the benefit of energy efficient equipment	1%
Rebate application process was challenging	1%
Internal staff lacked expertise about measures	1%
Other	5%
Don't know	2%
Respondents (n)	117

4.3.5 Installation verification

Eighty percent of downstream participants and 12 of 13 LED Instant Rebate participants reported that program measures were installed and operational in their facilities (Table 4-16). One LED Instant Rebate program participant and two Small Business Lighting participants reported that the LED lamps for which they received a rebate had yet to be installed. Measures were installed fairly soon after program participation; nearly three-quarters of respondents reported installing program measures within three months of confirmed program participation (Table 4-17).

Table 4-16. Installation Verification

Installation Status	Small Business Lighting	LED Instant Rebate	All
All equipment are installed and operational	92%	13	92%
No equipment are installed	3%	0	3%
Some equipment are installed, some are not installed	3%	1	4%
Don't know	2%	0	2%
Respondents (n)	98	14	112

Table 4-17. When Measures Were Installed

Time	Percent
Within 3 months of participation	72%
3-6 months after participation	9%
6-12 months after participation	13%
12-18 months after participation	1%
18-24 months after participation	0%
2 or more years after participation	0%
Don't know	6%
Respondents (n)	103

Three Small Business Lighting participants said some of their measures had been installed but were not yet operational (Table 4-18). One participant's LED lamps had been stolen, and another participant's lighting was broken. A third was unhappy with the performance of the fluorescent lamps installed and ordered a different product. All planned to have these products operational in less than six months' time. One LED Instant Rebate participant whose lighting was not yet installed reported that the equipment had failed and it was unclear when it would be operational again.

Table 4-18. Why Measures are not Installed and/or Operational

Reason	Small Business Lighting	LED Instant Rebate	All Participants
Equipment didn't work properly	0	1	1
Equipment failed/broke	1	0	1
Unhappy with performance	1	0	1
Too busy/haven't gotten to it yet	2	0	2
Other projects took priority	1	0	1
Other	2	0	2
Respondents (n)	6	1	7

Most of the 28 Direct Install participants reported that all of the free program measures installed during the lighting assessment are still installed and operational at their facility (Table 4-19). Two

Small Business Lighting participants reported that some of their LED lamps from the free lighting assessment were not yet installed (three and 12 units, respectively).

Table 4-19. Status of Free Measures Installed During Lighting Assessment

Status of Direct Install Measure	Count
Yes, all are still installed	24
No, none are installed	2
Some installed, some not installed	2
Respondents (n)	28

4.3.6 Energy efficiency policies and decision-making

Respondents identified themselves as the person most knowledgeable about their organization's participation in Xcel Energy programs. Nearly forty percent of respondents are in key leadership roles in their organization (business owners or co-owners, CEOs/CFOs, and president/vice presidents), and another 22 percent are facility, property, or operations managers. Respondents further include board members (5 percent), financial or accounting staff (4 percent), administrators (2 percent) and energy managers and engineers (2 percent, respectively) responsible for making decisions about lighting within their organization (Table 4-20).

Table 4-20. Role of Respondent in Organization

Role of Respondent	Percent
Business owner or co-owner	23%
General manager	19%
President/Vice President	13%
Facility manager	10%
Operations manager	7%
Property manager	5%
Board or Trustee member	5%
Financial or accounting staff	4%
Administrator	2%
Energy manager	2%
CEO/CFO	2%
Engineer	2%
Electrician	2%
Other	7%
Respondents (n)	132

One in four participants (24 percent) make energy-efficiency decisions for their organization on their own (as described in Table 4-21). Other participants reported sharing this decision with business owners or co-owners (32 percent), property owners or managers (14 percent), corporate management (10 percent) or with a designated committee or among co-workers (9 percent).

Table 4-21. Decision Makers

Respondents Solely Responsible for EE decisions	Count
Business owner or co-owner	15
General Manager	6
President/Vice President	3
Operations Manager	2
Property Manager	1
Engineer	1
Other	3
Respondents (n)*	32
Other Decision-Makers (Besides Respondent)	Percent
Business owner or co-owner	32%
Property owner or manager	14%
Corporate management	10%
Committee/group decision	9%
Contractor	7%
Facility manager	5%
Distributor or vendor	5%
Trustees or board members	4%
Financial or accounting staff	4%
Administrator	3%
Consultant	2%
Energy manager	1%
Other	11%
Respondents (n)*	100

* Multiple responses permitted.

Almost one-fifth of participants reported that their organization has corporate policies related to energy efficiency standards that must be considered when purchasing new equipment or making improvements to the facility (Table 4-22). Medium to large companies (with 10 or more employees per location) are more likely to have these policies (31 percent compared to 7 percent).

Table 4-22. Corporate Policies Related to Energy Efficiency Standards

Corporate Policy	Less than 10 Employees	10 or More Employees	All Organizations
Yes, there is a policy	7%	31%	19%
No, there is not a policy	92%	69%	80%
Don't know	1%	0%	1%
Respondents (n)	71	59	132

Most participants (19 of 25 respondents) who reported their company had an energy-efficiency policy governing their equipment or facility upgrade decisions indicated that they only purchased energy-efficient equipment if it meets specific return on investment or payback criteria (Table 4-23). One participant indicated it was corporate policy to purchase energy-efficient equipment regardless of cost. Four participants reported their companies had some policies regarding energy efficiency but made decisions on a project-by-project basis.

Table 4-23. Corporate Energy Efficiency Policy

Corporate Energy Efficiency Policy	Count
Purchase energy efficient equipment if it meets ROI criteria	19
Purchase energy efficient equipment regardless of cost	1
Purchase standard energy efficient equipment that meets code	1
Other (Decisions made on a by-project basis)	4
Respondents (n)	25

4.3.7 Customer profile

Over three-quarters of the organizations that responded to the survey were for-profit businesses, while 19 percent were non-profits, and 3 percent were governmental agencies (Table 4-24). The primary type of business activity undertaken at these locations varied considerably, and included office, retail, religious, service, food sales/service, and lodging, among others. Nonparticipant survey results are included for comparison purposes.

Table 4-24 . Organization Type and Business Activity at Premise

Characteristic	Participants	Nonparticipants
Organization Type		
For-profit business	77%	85%
Non-profit business	19%	6%
Local, state, or federal government	3%	9%
Something else	1%	0%
Respondents (n)	132	34

Characteristic	Participants	Nonparticipants
Business Activity		
Office/Professional	19%	12%
Retail	19%	12%
Religious Worship	11%	0%
Service	11%	18%
Food sales or service	8%	9%
Lodging	8%	6%
Warehouse or distribution center	6%	12%
Industrial/Manufacturing	6%	15%
Health Care	5%	3%
Education	4%	0%
Data center/computer server farm	1%	0%
Other	2%	3%
Public assembly	0%	9%
Agricultural	0%	3%
Don't know	1%	0%
Respondents (n)	132	34

About three-quarters of the responding organizations own their space while 20 percent rent (Table 4-25). About one-half have just one location, one-third have other establishments in the region, and 17 percent have other establishments across the country. Over one-half of the organizations employ less than ten full-time staff and almost one-third employ between ten and 50 people.

Table 4-25. Company Characteristics

Characteristic	Participants	Nonparticipants
Ownership		
Own	74%	50%
Rent/Lease	20%	47%
Manage property	4%	0%
Own some and rent/lease some	2%	3%
Respondents (n)	132	34
Number of locations		
Only location	52%	65%
One of several in the region	31%	24%
One of several across the nation	17%	12%
Respondents (n)	132	34

Characteristic	Participants	Nonparticipants
Number of employees at specific location		
Less than 10	54%	67%
10 to 49	31%	27%
50 to 99	8%	3%
100 to 249	4%	3%
250 to 499	1%	0%
500 or more	1%	0%
Don't know	2%	0%
Respondents (n)	132	33

* Question was asked at the respondent level.

4.3.8 Net promoter information

On a scale of 0 to 10, with 0 being “not at all likely” and 10 being “extremely likely”, participants reported an average net promoter rating of 9.0, indicating that they were very likely to recommend Xcel Energy to a friend, relative or colleague (Table 4-26). Five percent of participants said they were not likely to recommend Xcel Energy, citing difficulties with a contractor, lack of support from Xcel Energy, and a lack of competition for electricity in their service area. In fact, several participants across the rating spectrum expressed confusion about why they were being asked about their likelihood to recommend Xcel Energy when they did not have a choice among electric service providers in their area.

Participants who reported they were likely to recommend Xcel Energy but had some reservations (a score of 7 or 8) declined to give a “10” because they said there was always room for improvement, mentioning some specific recommendations such as increasing energy savings or making the program’s product qualification guidelines clear to customers. The majority of participants (71 percent) are very likely to recommend Xcel Energy (a score of 9 or 10) and cited Xcel Energy’s service, reliability, and their overall satisfaction with the rebate program, including improved lighting and energy savings.

Nonparticipants were less likely than participants to recommend Xcel Energy to others. The average net promoter rating for nonparticipants was 7.2. Most of those that gave a score of 5 or less (34 percent) said they gave the rating primarily because they are the only service provider in their area so there are no other options. One said they did not understand the fluctuations in their monthly bill, another said they just do not think about Xcel Energy, and two cited the installation of new equipment, for reasons such as a service upgrade, taking too long.

Table 4-26. Net Promoter Information

Likelihood of Recommending Xcel Energy	Participants	Nonparticipants
Mean Rating	9.0	7.2
Percent of Respondents Rating:		
0 - Not at all likely	2%	9%
1	1%	0%
2	0%	0%
3	1%	0%
4	0%	9%
5	1%	16%
6	1%	3%
7	4%	19%
8	16%	6%
9	17%	38%
10 – Extremely likely	58%	9%
Respondents (n)	125	32

4.4 NONPARTICIPANT SURVEY RESULTS

Next, we present detailed process results from the nonparticipant customer survey.

4.4.1 Program awareness and communications

About half of the eligible nonparticipant respondents were aware of Xcel Energy's energy efficiency programs (18 of 34). Of these 18 respondents, ten said they were aware of the Small Business Lighting program specifically after given a description of the program.

Email was the most commonly preferred method for receiving information from Xcel Energy about its programs (61 percent), followed by mailings (48 percent). Table 4-27 shows the full results of the various preferred methods of communication.

Table 4-27. Preferred Methods of Communication

Method	Percent
E-mail	61%
Mailing from Xcel Energy in general (i.e., bill inserts, direct mailings)	48%
Xcel Energy website	6%
Other	6%
Through a representative at the Business Solutions Center (BSC)	3%

Method	Percent
Another Xcel Energy staff member	3%
Saw an article in a newspaper, magazine, or newsletter	3%
Respondents (n)	33

* Multiple responses permitted.

4.4.2 Energy efficiency implementation and decision-making

Respondents were asked if they have implemented or considered implementing specific energy efficient equipment or upgrades in the past two years. Table 4-28 below shows energy efficient lighting was the most commonly mentioned upgrade implemented or considered, reported by 59 percent of respondents. Over one-quarter of respondents reported installing energy efficient lighting in the past two years (27 percent), and nearly one-third said they have considered installing energy efficient lighting (32 percent). Only one of the nine respondents that indicated installing energy efficient lighting said they had done so through an Xcel Energy program.

Table 4-28. Have Implemented or Considered Implementing the Following Upgrades

Energy Efficient Improvement		Percent
Automated control system that controls equipment such as HVAC and/or lighting (e.g., EMS, BAS)	Have implemented within the past two years	15%
	Have considered but not yet implemented	6%
	No	79%
	Respondents (n)	34
Energy efficient lighting	Have implemented within the past two years	27%
	Have considered but not yet implemented	32%
	No	41%
	Respondents (n)	34
Virtual desktop computers or PC power management software	Have implemented within the past two years	6%
	Have considered but not yet implemented	0%
	No	95 %
	Respondents (n)	34
Having an energy audit or assessment conducted	Have implemented within the past two years	9%
	Have considered but not yet implemented	12%
	No	79%
	Respondents (n)	34

Table 4-29 below shows other actions, if any, respondents have taken in the past two years to reduce their energy use. Over 56 percent of respondents have not taken any actions in the past two years to reduce their energy use. "Other" improvements accounted for 26 percent of the responses. Among those mentioned included solar, behavioral changes such as turning off the lights and equipment not in use, energy efficient appliance replacement, and modifying air handling protocols.

Table 4-29. Energy Efficient Actions Taken Within the Past Two Years to Reduce Energy Use

Actions	Percent
None	56%
Other	26%
Installed high efficiency lighting equipment	18%
Installed high efficiency cooling equipment	9%
Added lighting controls, occupancy sensors, and or time clocks	3%
Installed high efficiency heating equipment	3%
Installed high efficiency ventilation equipment	3%
Added controls to the heating, ventilation or air conditioning systems to reduce use	3%
Respondents (n)	34

Over two-thirds of respondents (70 percent) said they would seek out Xcel Energy in some form if considering implementing or installing new energy efficient equipment. After Xcel Energy, they mentioned they would seek out of information from a contractor or vendor (43 percent).

Table 4-30. Preferred Sources of Information for Energy Efficient Equipment

Source	Percent
Xcel Energy	70%
<i>Xcel Energy website</i>	20%
<i>Other Xcel Energy program staff</i>	20%
<i>Xcel Energy account manager</i>	10%
<i>Xcel Energy Business Solutions Center representative</i>	20%
Contractor/vendor	43%
General Internet search (e.g., Google search)	20%
Other	7%
Internal management staff	7%
Internal facilities management staff	3%
Respondents (n)	30

* Multiple responses permitted.

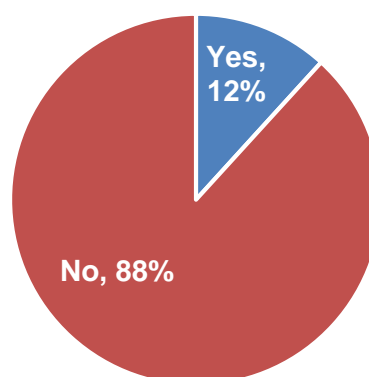
When asked to rate the level of importance of various business factors when considering new equipment, the highest rated factor was performance concerns (average of 8.8 on a scale of 0 to 10 where 0 is “not at all important” and 10 is “very important”). Capital investment or initial purchase cost were the next most important factors, both with average ratings of 8.7. Table 4-31 below shows the average ratings for all factors asked in the survey.

Table 4-31. Level of Importance When Considering New Equipment

Business Factors	Mean	Respondents (n)
Performance concerns	8.8	34
Initial purchase cost	8.7	34
Capital investment or budget availability	8.7	33
Energy savings or reducing your energy bills	8.4	34
Compatibility with existing equipment	8.3	34
Operating cost	8.2	34
Length of payback period	8.2	34
Efficiency level of new equipment	7.9	34
Environmental concerns	7.8	34
Some other consideration not already mentioned	7.5	8
Availability of a rebate	6.9	34
Recommendation of contractor or supplier	6.6	34

The vast majority of nonparticipant respondents reported not having any corporate policies related to energy efficiency standards (88 percent, 30 of 34 respondents). Of the four respondents that do report having a corporate policy, three of four said their practice is to purchase energy efficient equipment if it meets payback or return on investment criteria, whereas the other respondent said their policy is to purchase energy efficient equipment regardless of cost.

Figure 4-1. Respondents with Corporate Policies Related to Energy Efficiency Standards or Sustainability Plans (n=34)



4.4.3 Satisfaction with Xcel Energy and future program participation

On average, nonparticipants rated their overall satisfaction with Xcel Energy as a service provider 7.5 out of 10, where 0 is 'not at all satisfied' and 10 is 'very satisfied'. Those that were aware of Xcel Energy's rebate programs were also asked to rate their level of satisfaction with various program offerings. Table 4-32 below shows the average rating scores for each.

Table 4-32. Satisfaction Level with Xcel Energy Program Offerings and Xcel Energy Overall

Satisfaction Rating (0=not at all satisfied, 10=very satisfied)	Mean	(n)	Count (rated 6 or higher)
The type of rebated equipment or improvements available through Xcel Energy's programs	6.9	16	12
Requirements for project rebate eligibility	6.2	13	8
The amount of the rebates offered for equipment or improvements	6.7	13	10
The information you have received from Xcel Energy about their programs	6.1	17	10
The level of technical support and information available to you, including technical assessments	5.1	16	7
Xcel Energy overall as your provider	7.5	34	26

Respondents were asked to rate their level of interest in participating in an Xcel Energy program in the future. Sixty percent of respondents gave a rating of 6 or higher. Nine percent of respondents stated they were not at all interested. The most frequently mentioned reasons for not participating were cost, do not generate enough electricity to be worthwhile, lease the property, and do not want or need to upgrade.

Table 4-33. Interest Level in Participating in an Xcel Energy Program in the Future

Rating (0=not at all interested, 10=very interested)	Total		
	Mean	(n)	Percent Rated 6 or Higher
Interest in participation, 0 to 10 scale	6.3	33	61%

5. TRADE PARTNER INTERVIEWS

This section provides summary findings from trade partner interviews conducted as part of the evaluation of Xcel Energy's Colorado Small Business Lighting program.

5.1 INTRODUCTION

NMR staff conducted a total of 15 trade partner interviews in August 2016. The sample frame included 35 unique trade partner contacts that participated in the Small Business Lighting program in 2015-2016 from which we targeted the most active participants. About one-third of the 35 contacts participated in both the LED Instant Rebate program track and the downstream program track. In an effort to limit interviewee burden, the team asked each trade partner interviewee about only one of the two program tracks—attempting to interview them about the program in which they were more active. In the end, the evaluation team interviewed a total of 15 trade partners; eight regarding the LED Instant Rebate program and seven regarding the downstream program.

Together, the seven interviewees that answered questions about the LED Instant Rebate program represented about 23 percent of all LED Instant Rebate savings and the eight interviewees that answered questions about the downstream program represented about 26 percent of all downstream program savings.

LED Instant Rebate interviewees were mainly distributors (six of eight), although two were energy service companies (ESCO); the downstream interviewees were a mix of installation contractors (three of seven), ESCOs (two), and distributors (two). Most of the companies dealt exclusively in lighting products. The typical downstream interviewee's company had fewer than 20 employees, although the companies' sizes varied widely, with the smallest being a single-person installation contractor and the largest a 2,000-person distribution company. LED Instant Rebate interviewees' companies had an even wider range—some had fewer than 20 employees, however, one interviewee worked for a 17,000-person distribution company.

Interviewers conducted these semi-structured telephone interviews using a topic guide. This topic guide served to offer consistent direction to ensure certain topics were covered; however, interviewers were permitted to tailor and modify questions as needed to fit the interviewee's experience and explore other topics of particular interest to interviewees. The interviews focused on a discussion of the following topics:

- *Program Satisfaction*: satisfaction overall, program support and communication, training, and newsletter
- *Program Clarity, Familiarity, and Awareness*: overall clarity and familiarity, program track clarity, and customer awareness
- *Program Design*: equipment gaps, rebate levels, and program eligibility
- *Program Application Procedures*: prescriptive and custom applications and preapproval
- *LED Instant Rebate Invoicing*: financial burden of upfront costs and ease of invoicing
- *Program Value*: overall value to trade partners and customers, customer decision-making, and net-to-gross



- *Market Transformation:* program impact on sales, projected trends, and program role.

5.2 KEY FINDINGS

Below are key findings from the trade partner interviews.

5.2.1 Program satisfaction

- *Trade partners are satisfied with the program overall.* Trade partners were pleased by the increase in both LED sales and customer satisfaction from participating in the program. Most trade partners that worked with other utilities' business lighting programs preferred Xcel Energy's program due to the competitive rebate levels, usability of the customer address verification tool for the LED Instant Rebate products, and knowledgeable program staff.
- *Program support appears sufficient.* Trade partners are pleased with program interactions, referring to program staff as "immensely helpful," "resourceful," and "great communicators." Interviewees consider program and rebate updates the most important information and are satisfied by the support in this area.

5.2.2 Program clarity and awareness

- *Trade partners understand program processes.* All but two trade partners indicated that they understood all facets of the program. In addition, interviewees displayed a good grasp of which products are program-eligible.
- *Guiding customers to the appropriate program track is straightforward.* In general, interviewees found the process of directing a project to the custom, prescriptive, or LED instant rebate tracks to be relatively clear. Most interviewees explained that they gravitate towards the LED Instant Rebate program or prescriptive track, and if that approach does not work then they move to the custom track. They agreed that Xcel Energy does not need to change any processes in order to simplify the decision regarding which track to pursue.

5.2.3 Program design

- *Trade partners are generally satisfied with the design of the LED Instant Rebate program but some suggested improvements.* While interviewees were pleased with the LED Instant Rebate program, they made several recommendations for improvement, such as reducing the redundancy of the invoicing forms, moving products from the prescriptive program to the LED Instant Rebate program, and being more selective regarding trade partner eligibility.
- *The downstream program appears to serve the market well.* Most downstream interviewees agreed that the program serves both vendors and customers well. However, several trade partners reported navigating the program on behalf of their clients because they thought customers would be intimidated or confused by the process, largely attributing this to customers' lack of awareness of lighting technologies.
- *Some trade partners feel the eligible product list could be expanded.* While several interviewees agreed there are a reasonable variety of products eligible for the program, some suggested adding products, including the following: G24 lamps, T8 LEDs, and shift

four-foot LEDs and PL lamps from the prescriptive program to the LED Instant Rebate program.

- *Trade partners leverage the program to help sell projects.* Most trade partners use the program to increase the attractiveness of their projects by the reducing upfront cost and increasing the return on investment (ROI). Several called the program “an in” to engaging customers into working with them. In addition, nearly all interviewees believed that the program has increased the size and/or number of lighting projects. Others appreciated the provision of customer leads.

5.2.4 Program procedures

- *Trade partners found the application process to be relatively easy.* Interviewees believe that completing the prescriptive application and custom application are both relatively easy. However, one contractor suggested moving the prescriptive application process online—a suggestion that Xcel Energy plans to implement in the near future. In addition, one distributor reported that learning how to use the Microsoft Excel-based worksheet was challenging.
- *Overall, interviewees’ impressions of the custom preapproval process were mixed.* Three interviewees praised CLEAResult’s role in the custom preapproval process, and most indicated that the time required to receive preapproval was reasonable. Others considered the preapproval process time-consuming and redundant in cases where a project was participating in both the custom and prescriptive tracks.
- *Interviewees cited inconsistency as a challenging feature of the preapproval process.* One distributor explained that it is difficult to explain the situation to customers when they do not receive a clear reason why a project does not receive approval. Interviewees suggested streamlining the preapproval application and offering tools to help trade partners calculate the rebates themselves.
- *Project cost is the most common deterrent for pre-approved projects.* Some interviewees reported that projects often return from preapproval with less of a rebate than was expected, and budget constraints or ROI concerns prevent customers from moving forward. One installation contractor suggested implementing an informal preapproval process that does not require numerous customer signatures or detailed project plans.

5.2.5 Market transformation

- *The Colorado market will trend heavily towards energy-efficient lighting, specifically LEDs.* Nearly all interviewees anticipate that their companies’ own sales of program-qualified lighting equipment, in particular LEDs, would increase over the next two years. In addition, interviewees speculated that the program will play a significant role in the market transition to LEDs as, in their experience, the program already is a pivotal factor in customers’ decision-making.
- *Trade partners expressed enthusiasm for lighting controls.* Some interviewees anticipate that lighting control sales will grow due to the benefits that lighting controls offer in terms of energy savings as well as emerging energy code changes for new construction. Trade partners offered several suggestions how the program could emphasize controls: increase

the rebate levels, add more variety to the prescriptive control options, find ways to integrate them into the custom program⁵ and boost customer awareness.

5.3 DETAILED FINDINGS

Next, we present detailed findings from the trade partner interviews. As the interviews were semi-structured, not all interviewees were asked or answered the same questions in the exact same manner; therefore, response counts should generally not be viewed as proportions of responses, unless specifically indicated.

5.3.1 Program satisfaction

A. *Overall satisfaction*

Eleven of the fifteen trade partners said they were very satisfied and four were somewhat satisfied with the program. In particular, they were pleased with the increased LED lighting sales that they attributed to the program, the support that they receive from program staff, and the improvement in their customers' satisfaction. The LED Instant Rebate interviewees were in agreement that customers are satisfied with the program. They pointed out that customers are specifically pleased with program-subsidized prices and not having to handle the verification, qualification, and paperwork processes.

Fourteen of the fifteen interviewees participated in programs offered by other utilities, and only three preferred other programs over Xcel Energy's program. They identified several reasons for preferring Xcel Energy's program: competitive rebate levels, the usability of the customer address verification tool for the LED Instant Rebate program, and knowledgeable program staff. In instances where they favored other programs, it was due to the complexity of Xcel Energy's paperwork processes and finding other programs' paperwork to be less time consuming. Interviewees identified several ways for the program to improve: allow for submitting applications online,⁶ add more LED products (described in more detail below), and provide rebates *solely* based on the amount of energy saved on a project.

B. *Program support and communications*

Trade partner participants reported positive interactions and excellent communication with the program staff. The downstream participants communicate with Xcel Energy account managers and CLEARResult while the LED Instant Rebate participants' contact is through Ecova. Most interviewees estimated that they communicate with program staff at least once per month.

Interviewees were pleased with program communications and considered their interactions with program staff as positive, referring to program staff as "immensely helpful," "resourceful," and "great communicators." However, a couple interviewees did not receive consistent support from CLEARResult (e.g., some CLEARResult staff were not as communicative as others), although both

⁵ It should be noted that Xcel Energy currently includes lighting controls as part of its Energy Management Systems program, but will be rebranding and promoting advanced lighting controls under the custom programs in the upcoming program year.

⁶ An offering that Xcel Energy plans to implement in the near future.

interviewees still believed their interactions with the program and communication overall was positive. Interviewees believed the most important information is whether rebate levels or the program structure has changed in any way; on that note, one distributor emphasized that program staff “always do a great job in communicating any updates to the program.”

Two-thirds of interviewees do not need any additional support or tools from the program. Though finding CLEAResult’s audit reports reasonable, some downstream interviewees suggested that the audit reporting process allow for more transparency and trade partner engagement; for example, three interviewees would like improved tools to help them estimate program rebate and savings amounts in line with CLEAResult’s approach. In addition, one interviewee asked for more customer leads from CLEAResult.

C. Program-supported training

Two-thirds of trade partner interviewees attended trainings and most found them useful to learn about general program updates or new rebate offerings. One ESCO contractor appreciated that the trainings provided him the opportunity to learn from other participants’ experiences, and an installation contractor liked having an opportunity to obtain clarification in person from program staff. The ESCO contractor added that the trainings “bring everyone on the same page.” The only criticism was minor: one interviewee requested that the program trainings bring in different vendors, feeling that the program always invited the same vendors to introduce their products. Additionally, one interviewee requested more training on the Custom application process.

Two interviewees—both of whom had not attended a training—did not see any value in program-sponsored trainings. One of the two respondents, a distributor, explained that program staff are not technical experts, whereas his company are experts and therefore program staff would not offer any revelatory insights to his team. Interviewees did not have an overwhelming preference regarding the training format (webinar versus in-person).

D. Program newsletters

Xcel Energy distributes electronic newsletters providing program updates, summarizing program metrics (i.e., rebates paid and savings reaped), identifying the leading participating trade partners, clarifying rebate options and offerings where confusion has occurred, and sharing any other program news. All but three of the fifteen interviewees read the newsletters. Most found them useful and engaging as they provide advance notice about any upcoming program changes in rebate levels or product qualifications. One downstream installation contractor explained that the program is quite “dynamic” lately and the newsletter allows him to keep abreast of any changes in program offerings. A few LED Instant Rebate trade partners liked seeing other participants’ sales rankings, with one distributor adding that it acts as a motivational tool for him to increase his sales.

5.3.2 Program clarity, familiarity, and awareness

A. Overall program clarity and familiarity

Trade partner interviewees reported that they understood the program processes, with all but two indicating that they understood all facets of the program. A few interviewees attributed their clarity to Xcel Energy’s midyear update and the newsletter. Xcel Energy is currently evaluating launching a comprehensive website with program resources for trade partners; which may help provide additional clarity on program offerings.

Interviewees displayed a good grasp of which products are program-eligible, but only one of the fifteen interviewees thought that their customers were also aware. According to the interviewees, customers' lack of awareness is primarily due to their lack of knowledge of lighting products, although several interviewees believe customer awareness of product eligibility to be unnecessary—it is the trade partners' responsibility to be aware for the customer.

B. Program track clarity

In general, the interviewees found the decision-making process clear when it came to directing a project to the custom, prescriptive, or LED instant rebate tracks. Most interviewees explained that they gravitate towards the LED Instant Rebate program or prescriptive track, and if that approach does not work for them or their customers, then they attempt the custom track. They agreed that Xcel Energy does not need to change any processes in order to simplify the decision regarding which track to pursue. In addition, three interviewees reported using Xcel Energy to identify the most valuable track for their customers.

C. Customer awareness

Trade partner interviewees observed an increase in customer awareness of the program over the past year (September 2015 through August 2016); many attributed this improvement to an increase in customers' general awareness of rebate programs, and, more specifically, several attributed it to Xcel Energy's active promotion of the program. Despite a reported increase in customer awareness, two-thirds of the interviewees still believe that only "some" or "few" customers were aware of the LED Instant Rebate or downstream programs. Several LED Instant Rebate interviewees observed that even though most customers know that programs exist, they are uninformed about the specific programs and their eligibility requirements.

All 15 trade partners reported that they actively promote or introduce the program to their customers. Most do so by informing customers of the rebate amounts and discussing their return on investment (ROI). Several pointed out that introducing the program to their customers is beneficial for both parties. In addition, most of the LED Instant Rebate trade partners indicated that their invoices list the amount of the Xcel Energy discount. One of the distributors explained that if the customer knows the rebate amount, trade partners sell LEDs more easily than other lightbulbs, and a downstream contractor added that because of the program customers know "at the end of the day they are getting lightbulbs cheaper from us than at the box stores."

5.3.3 Program design

Interviewees generally had positive impressions of the overall program design. A few opined that more could be done to promote Xcel Energy programs overall, but did not have any specific recommendations for program improvement. All LED Instant Rebate interviewees indicated that the program serves customers well. Most also agreed that it serves the vendors well, with two noting that it drives business. However, one distributor requested transparency regarding the calculation of rebate amounts and another expressed frustration with "continuous" changes to the program offerings and incentive levels. When asked what is working well about the LED Instant Rebate program, interviewees mentioned the program's simplicity, ease of use, and effectiveness; further, they noted that the program subsidies result in low upfront costs that effectively incent customers to install LEDs. One distributor summarized,

“It is instant and that is it. People don’t need to wait and can do a project now. Instead of just having to buy one case a month, they can get many cases at once. They can retrofit a whole floor or a whole lobby and just get the projects done now and sooner.”

While interviewees were generally pleased with the LED Instant Rebate program, they made several recommendations for improvement, such as reducing the redundancy of the invoicing forms, moving products from the prescriptive program to the LED Instant Rebate program, and being more selective when it came to permitting trade partners to participate in the program. For example, one distributor believed that online distributors that do not have local representatives should not be able to participate because they would benefit financially from the program but not provide an adequate level of support to Xcel Energy customers.

Most downstream interviewees agreed that the program serves both vendors and customers well. Several reported navigating the program on behalf of their clients because they thought customers would be intimidated or confused by the process; they attributed this largely to customers’ lack of awareness of lighting technologies which makes it difficult to identify eligible products (three interviewees), but also that customers are disinterested in learning about the process (one interviewee) or cannot distinguish between selecting the custom versus prescriptive tracks (one interviewee). An installation contractor added that the program could increase participation by expanding rebate offerings.

A. Equipment gaps

While several interviewees agreed there are a reasonable variety of products available through the program, some suggested adding products: two LED Instant Rebate interviewees requested G24 lamps, with a distributor noting that many schools, hotels, and government buildings use 26-watt CFLs and there is an opportunity to replace these with LEDs across large square-footage buildings. Two interviewees suggested adding T8 LEDs, and a distributor suggested moving four-foot LEDs and PL lamps from the prescriptive program to the LED Instant Rebate program. One ESCO contractor expressed confusion as to why Type-A tube LEDs have higher rebate levels than Type-B LEDs, noting that Type-B have a longer lifespan and greater energy savings. A distributor also hoped to see CFL plug-ins included in the prescriptive or LED Instant Rebate programs.

B. Rebate levels

Most LED Instant Rebate interviewees considered the rebate amounts adequate to encourage participation. However, two noted that rebate levels were dropping to mirror LED price trends, which, in their opinion, might discourage some customers. One distributor warned that reduced LED Instant Rebate levels would require selling lower-quality products to keep projects affordable for their customers.

Most downstream interviewees agreed that the rebates are generally adequate to encourage participation, with a few caveats and suggestions. One distributor hoped to see rebates increased for specific products, such as LED high-bay and exterior lighting. Another distributor was disappointed that less-efficient products appeared to be more highly-incentivized than more efficient options: he reported that the program provides higher incentives for ballast-ready type-A tube LEDs than for ballast-ready type-B tube LEDs, but, in his experience, type-B LEDs are more energy efficient, have a better fire safety record, and longer lifespan. An installation contractor asserted that a 10-20 percent increase in rebate levels would increase participation; however, another installation contractor preferred the option of a direct-install program over an increase in rebate levels.

C. LED Instant Rebate program customer eligibility

Four of the seven LED Instant Rebate interviewees indicated that it was easy to determine whether a customer is served by Xcel Energy. However, one ESCO contractor reported issues with the address verification on 25 to 30 percent of projects and a distributor reported having issues when a customer has multiple accounts or addresses.

5.3.4 Program procedures

A. Prescriptive application

Downstream interviewees did not find the prescriptive application process challenging: on a 1 to 5 scale, where 1 represents “very difficult” and 5 represents “very easy”, they rated the difficulty of completing the prescriptive application a 4.3, on average. One installation contractor suggested improving the application process by moving it online; however, Xcel will transition to an online format in the near future.

B. Custom application process

Trade partners found the custom application a bit more challenging than the prescriptive application process. Using the same 1 to 5 scale, downstream participants rated the difficulty of completing the custom application a 3.9, on average. They consider the custom application—an implicitly more complex process—more complicated and time consuming than the prescriptive application. One distributor indicated that learning how to use the Microsoft Excel-based worksheet was challenging and requested additional training from Xcel Energy.

Overall, interviewees’ impressions of the preapproval process were mixed. Three interviewees praised CLEAResult’s role in the preapproval process, and most indicated that the time required to receive preapproval was reasonable; in fact, an ESCO contractor noted that the turnaround time has recently improved. Yet, one ESCO contractor thought that the process could be faster and suggested that the trade partners be allowed to send their applications directly to the Xcel Energy engineers—rather than first sending them to the sales representatives who then send them to the engineers, thinking that this would allow trade partners to readily engage with engineers on any questions. Others considered the preapproval process time-consuming and redundant in cases where a project was participating in both the custom and prescriptive tracks.

Besides the effort involved in completing the preapproval application, interviewees cited inconsistency as a challenging feature of the preapproval process. One distributor explained that when they do not receive a clear reason why a project does not receive approval, it is difficult explaining the situation to customers.

Interviewees suggested streamlining the preapproval application and offering tools to help trade partners calculate the rebates themselves.

Five downstream interviewees recalled instances in which a custom project was pre-approved but the customer did not apply for program rebates, citing project cost as the most common deterrent. Some interviewees reported that projects often came back with less of an incentive than was anticipated, and budget constraints or ROI concerns prevented customers from moving forward. One installation contractor suggested implementing an informal preapproval process that does not require numerous customer signatures or detailed project plans because of his difficulty in

accurately estimating program rebate amounts. While interviewees believe that rebate levels are adequate generally, they suggested that more significant rebate amounts and/or on-bill financing would encourage customers, in these instances, to pursue these projects.

5.3.5 Invoicing

Most LED Instant Rebate trade partners were not concerned about covering the upfront cost of LED discounts and waiting until they received reimbursement from the program. The one interviewee who was concerned explained that it interrupts the commission that he receives on his sales. While not particularly concerned, one distributor wished the incentive check would arrive within five weeks of the sale. A larger distributor suggested automating the LED Instant Rebate invoicing process like other utility programs to speed up the process. One distributor, however, noted that Xcel Energy's turnaround was quicker than other utilities.

Most downstream interviewees agreed that invoicing requirements are reasonable. However, one installation contractor balked at the requirement to break out labor and material on the invoice after the customer had already signed off on the project.

5.3.6 Program value and customer decision-making

Most trade partner participants perceived that customers value the program because it provides a reduced upfront project cost and a higher ROI. A few interviewees also mentioned that the program affords customers the ability to install a new technology, such as LEDs, that they might not have otherwise installed because "otherwise they wouldn't have the budget," as one distributor explained.

Most trade partners said that they actively leverage the program to increase the attractiveness of their projects by presenting the reduced upfront cost and larger ROI. Several called the program "an in" to engaging customers into working with them. For example, an ESCO contractor said that it allows his company to get its "foot in the door" and, on top of that, develop his rapport with the customer.

When asked what value the program held for them as the trade partner, nearly all interviewees believed that the program has increased the size and/or number of lighting projects: one distributor called the program a "driving force" in his company's sales. Others appreciated how the program provides them with customer leads, though one still wanted more leads. A few thought it made them more competitive in the market; in the words of one distributor,

"It is an awesome opportunity for us. We have been waiting to compete with big box stores because [big box stores] have rebates [resulting in lower prices] that we couldn't compete with [otherwise]."

In fact, the interviewees mostly became involved with the program to increase their sales and improve or maintain their competitive position in the market by helping their customers reduce their upfront costs, increase their energy savings, and, in effect, increase their ROI.

A. Customer decision-making factors

When working with customers, trade partners typically interact with facilities and operations managers and, in some cases, higher-level executives. Most interviewees indicated that the type of contact person usually depends on the type of customer. Many interviewees identified upfront costs

and total costs as pivotal considerations in customers' decision-making processes; second to cost, customers appear mostly concerned with ROI and rebate eligibility, and some focus on the electricity-bill savings that they could potentially reap. One distributor summarized how price outweighs potential electricity-bill savings:

"I would say the price is the most important thing: [while] an energy-efficient light will help reduce [customers'] monthly power bill, if [they] can get that lamp for \$2 instead of \$8 or \$9, then that's the no-brainer right there."

Some trade partners also mentioned rebate-eligibility and product quality as important factors in customer decision-making.

B. Motivations and barriers to participation

According to the majority of trade partners, customers' top motivation for pursuing lighting retrofit projects is to save energy and reduce electricity-bill costs; after that, they are hoping to improve the quality of their facilities' lighting. A couple interviewees mentioned that customers are inspired to pursue lighting projects because they want to take advantage of rebate opportunities, such as those from Xcel Energy. However, eleven interviewees noted that customers are held back from making energy-efficient lighting upgrades because they find the investment costs prohibitive. Adding that program subsidies are very helpful, one distributor described a typical large LED Instant Rebate project scenario:

"It's tough to upgrade, especially if you have a large floor, with tons of troffers, and it's all open [floor plan]—it's really expensive to upgrade all of the troffers at once. If you don't do that, your lighting looks really ugly for a long time because there's a huge difference between CFL and LED [light quality]. When we're changing out lamps, a lot of customers say, 'We can't do it right now, because we have to wait until [the budget] is saved up.' Even though [trade partners] are receiving a good amount of funding for these lamps, if there are 300 of them that need to be changed out at a couple of bucks a pop, [customers'] budgets are tight, and it's tough for them. I'd definitely say price is a factor there and rebates do help a lot with that."

Seven interviewees also pointed to customers' misconceptions and/or lack of knowledge about energy-efficient lighting products as a barrier. One installation contractor described how customers are unwilling to install LEDs because they have heard "horror stories" about LED quality. A distributor pointed out how customers were "just sold the next big thing" (i.e., CFLs), and now that trade partners are turning their attention to LEDs, customers are skeptical about going through the same cycle again.

5.3.7 Market transformation

Interviewers asked trade partners a series of questions to help gauge the ways in which the energy-efficiency lighting market is transitioning or has transitioned and the ways in which the program fits into the market.

A. Projected trends

Trade partner participants concurred that the Colorado nonresidential-lighting market will trend heavily towards energy-efficient lighting, specifically LEDs, in the coming two years. One ESCO

contractor believes the market will continue to move towards LEDs partly because of programs, but also because LEDs are becoming less expensive, the average LED lifetime is lengthening, and customer and vendor knowledge of them is increasing. While some saw this shift as an opportunity to expand their business, some anticipate challenges: for example, two thought the market will be “flooded” and then saturated, presenting competition for their businesses.

Nearly all interviewees expected that their companies’ own sales of program-qualified lighting equipment would increase over the next two years. One trade partner projected no change and none projected a decrease.

B. Program role in trade practices

Most trade partners did not report any changes in the percentage of sales situations in which they recommend high-efficiency lighting or services since they first learned about the program, although high-efficiency sales did increase following program participation, as described below. In many cases, the interviewee had already been recommending high efficiency lighting in almost all sales situations; however, two interviewees—both LED Instant Rebate distributors—recommend them more often now than they did in the past. One of these interviewees said that his company never focused on high efficiency installations, but with the emergence of rebates they changed their practices and now recommend high-efficiency equipment in all sales situations. The other interviewee said that before they only installed them upon customers’ request and now they always recommend them.

Interviewees speculated that the program will play a significant role in the market transition to LEDs as, in their experience, the program already is a pivotal factor in customers’ decision-making; in one downstream distributor’s words, “Again, it drives business, so it’s going to affect a huge amount of that business.” A downstream distributor added, “If the program went away it would severely be a detriment to the industry.”

All trade partners believed that the program influenced their sales and/or installations; on top of that, eight interviewees reported a significant increase in their sales since beginning their participation in the program. An ESCO contractor described the program’s vital role:

“It is an important part of getting projects implemented and moving. Even if it is token [based]; it still makes people implement their projects and it impacts the ROI which is critical.”

C. Lighting controls

Trade partners expressed enthusiasm for lighting controls; some anticipated that lighting control sales would grow. They attributed this projected increase to: 1) the benefits lighting controls offer in terms of energy savings, and 2) emerging energy code changes that require all newly constructed buildings to install lighting controls. One LED Instant Rebate distributor explained how the integration of LEDs has contributed to energy savings, and now lighting controls offer the only opportunity to provide further lighting-related savings. When asked how the program could target lighting controls, trade partners offered several suggestions: boost general awareness through literature (e.g., brochures, advertisements, web), increase the rebate levels for lighting controls, add more variety to the lighting control options in the prescriptive product list, and find ways to integrate them into the custom program. It should be noted that Xcel Energy currently includes lighting controls as part of its Energy Management Systems program, but will be rebranding and promoting



advanced lighting controls under the custom lighting programs in the upcoming program year. A few of the interviewees, however, saw challenges to supporting lighting controls: an ESCO contractor suggested that the program “take a deep look” at lighting controls because the process of specifying controls adds work for the contractor and implementing lighting controls does not always yield a sufficient ROI level without substantial incentive amounts that will entice customers.

6. NET-TO-GROSS RESEARCH

This section presents the methodology and results of the net-to-gross (NTG) research conducted as part of the evaluation of Xcel Energy's Colorado Small Business Lighting program.

6.1 INTRODUCTION

NTG is one indicator of program performance that estimates a program's influence on the implementation of program-eligible measures. The NTG ratio is the ratio of program-attributable savings over program gross savings. This ratio includes *program free-riders* (i.e., participants that would have implemented at least some, if not all, of the actions incentivized by the program in the absence of that program) and *program-induced spillover* (i.e., additional energy-efficiency projects implemented by customers due to program influences but without any financial or technical assistance from the program).

The evaluation team calculated NTG ratios using the self-report approach (SRA). The SRA NTG is based on quantitative surveys with recent participating customers, participating distributors, and influential vendors (trade partners identified by participating customers as being influential in their decision-making process). The evaluation team further triangulated the calculated SRA NTG ratios with other sources of information to recommend NTG ratios for the Small Business Lighting program that the team believes most accurately represents program attribution. The triangulation data sources include market transformation indicators from influential vendor surveys, in-depth interviews with trade partners, benchmarking review of NTG estimates of similar programs, nonparticipant installations of energy efficient equipment, and known program changes that may affect future attribution levels.

It is important to keep in mind that NTG ratios should continue to be revisited and revised as program modifications are made that could have an upward or downward effect on the NTG ratio. The NTG ratio analysis presented here is based on past program participation and any changes to program design, delivery, or target market should be taken into account when deciding what NTG ratio to apply to the program in the future.

Key findings from the NTG research are summarized next, followed by the detailed methodology and results.

6.2 KEY FINDINGS

Table 6-1 presents the current NTG ratios used for the Colorado Small Business Lighting program, the NTG ratios calculated as a result of using the self-report approach (SRA), and the final recommended NTG ratio for future program use based on a triangulation of multiple sources of information from customers, vendors, and secondary research. With these considerations in mind, the evaluation team recommends a NTG ratio of 89 percent for the downstream rebate program, 90 percent for the direct install channel, and 92 percent for the LED Instant Rebate program (i.e., LED Instant Rebate program).

Table 6-1. Recommended NTG Ratio for CO Small Business Lighting Program

Delivery Channel	NTG Ratio	Estimate
Downstream Rebate	Current Program NTG Ratio	100% - Prescriptive 96% - Custom
	Calculated SRA NTG Ratio	89%
	Triangulation Adjustment	N/A
	Recommended NTG Ratio	89%
Direct Install	Current Program NTG Ratio	100%
	Calculated SRA NTG Ratio	84%
	Triangulation Adjustment	6%
	Recommended NTG Ratio	90%
Midstream LED Instant Rebate	Current Program NTG Ratio	100%
	Calculated SRA NTG Ratio	92%
	Triangulation Adjustment	N/A
	Recommended NTG Ratio	92%

Table 6-2 summarizes the number of participants surveyed, population counts and savings, and SRA NTG results by delivery channel. Overall, the SRA NTG results were based on 136 premise-level surveys among 94 unique downstream and 28 direct install participant customers. We also conducted quantitative surveys with 18 vendors identified by participant customers as being influential in their decision-making process for 21 downstream projects. For the midstream LED Instant Rebate program, the SRA NTG results were based on surveys with 15 participating distributors (eight in Colorado and seven in Minnesota) to estimate a single NTG ratio for both territories.

Table 6-2. Summary of CO Small Business Lighting Program SRA NTG Results

Delivery Channel	Participants		Trade partners / Influential Vendors		Overall Program	
	Premises Surveyed*	Premises Population	Interviewed	Population	Population Gross Savings (kWh)	SRA NTG Ratio
Downstream Rebate	94	827	18	131	15,289,514	89%
Direct Install	28	267	N/A	N/A	1,604,497	84%
Midstream LED Instant Rebate	39 (CO and MN)	1,040	15 (CO and MN)	56	15,419,840	92%
Overall	136	2,134	23	187	32,313,851	90%

*The downstream and direct install customer survey-based ratios were calculated at the premise-level and then weighted by premise-level savings back to the measure-category savings; all trade-ally based free-ridership and spillover values and the LED Instant Rebate ratios were calculated at the interviewee level and then weighted by savings associated with the company/premise that the interviewee represented.

While the triangulation research is generally consistent with the SRA results for the downstream rebate component, the triangulation research suggests that the calculated NTG ratio of 84 percent for the direct install channel from customer self-reports likely underestimates the program's influence on direct installations. The SRA NTG estimate of 84 percent is based on relatively limited sample (28 customer self-reports), and includes 18 percent overall free-ridership estimate with a precision-level of ± 9 percent at the 90 percent confidence level. The SRA results also found a free-ridership rate of 18 percent for the downstream rebate component, with a more robust participant sample. Considering that direct install measures are provided to customers free of cost and are directly installed by the program, all else equal, we would expect lower levels of free-ridership for direct install measures compared to rebated measures. In addition, the benchmarking research found NTG estimates for two peer small business direct install programs against which to benchmark the SBL program results, and both had higher evaluated NTG ratios. An evaluation of Duke's Small Business Energy Saver (SBES) program estimated a free-ridership rate of 4 percent, spillover of 0 percent, and therefore an overall NTG ratio of 96 percent. PECO's evaluation results for its Smart Business Solutions program resulted in 10 percent free-ridership, 0.2 percent spillover, and an overall NTG ratio of 90 percent.

With these considerations in mind, the evaluation team feels an upward adjustment to the calculated NTG ratio is warranted for the direct install channel, although the program's current planning estimate of 100 percent is likely too high based the customer self-report and benchmarking findings. Therefore, we recommend an upward triangulation adjustment of 6 percent to the calculated SRA NTG ratio for the direct install component, from 84 percent to 90 percent, based on an average of the SRA results and the two benchmarked programs' NTG estimates.

6.3 METHODOLOGY

This section summarizes the methods used to estimate the SRA NTG results for the Colorado Small Business Lighting program for each delivery channel.

6.3.1 Downstream rebate

The SRA NTG ratio for downstream rebate projects was calculated using the following equation.

$$NTG \text{ Ratio} = 100\% - \text{freeridership} + \text{participant spillover} + \text{nonparticipant spillover}$$

Next we describe the methodological approach and calculation of each attribution factor in the SRA NTG ratio.

A. *Free-ridership*

A program's free-ridership rate is the percentage of program savings attributed to free-riders. A free-rider refers to a program participant who would have taken the same energy efficiency action on their own at that same time if the program services had not been offered. It is important to measure the *extent* of free-ridership for each customer. Pure free riders (100 percent) would have installed exactly the same efficiency (where applicable) and quantity of the measure at that time in the absence of the program. Partial free riders (1–99 percent) are those customers who would have installed some equipment on their own, but a lesser efficiency, at a later date, or lesser quantity than installed through the program. Thus, the program had some impact on their decision. Non-free riders (0 percent) are those who would not have installed any program-eligible measures within a period of time in the absence of the program services.

A free-ridership score was calculated for each participant surveyed at the measure-category level. Individual free-ridership results are weighted based on the claimed gross energy savings for each participant and the distribution of program population savings by measure-category.

For downstream rebate projects, free-ridership was assessed using a methodology based on the California self-report framework for standard NTG projects⁷, with some refinements specific to Xcel Energy's programs. The standard California framework uses two primary sources of information to estimate free-ridership: participant customer surveys with a key decision-maker, and influential vendor surveys with participating trade partners identified by customers as being influential in their decision-making process.

Free-ridership is calculated as an average of three scores representing responses to one or more questions about the decision to install a program measure(s). The free-ridership score is then adjusted by previous experience with an Xcel Energy program if the customer indicates that previous program participation was influential in their decision to implement the sampled project. The three scores are as follows:

1. A ***Timing and Selection*** score that captures the influence of the most important of various program and program-related elements in influencing the customer to select the specific program measure at this time. Program influence through vendor recommendations is also captured in this score.

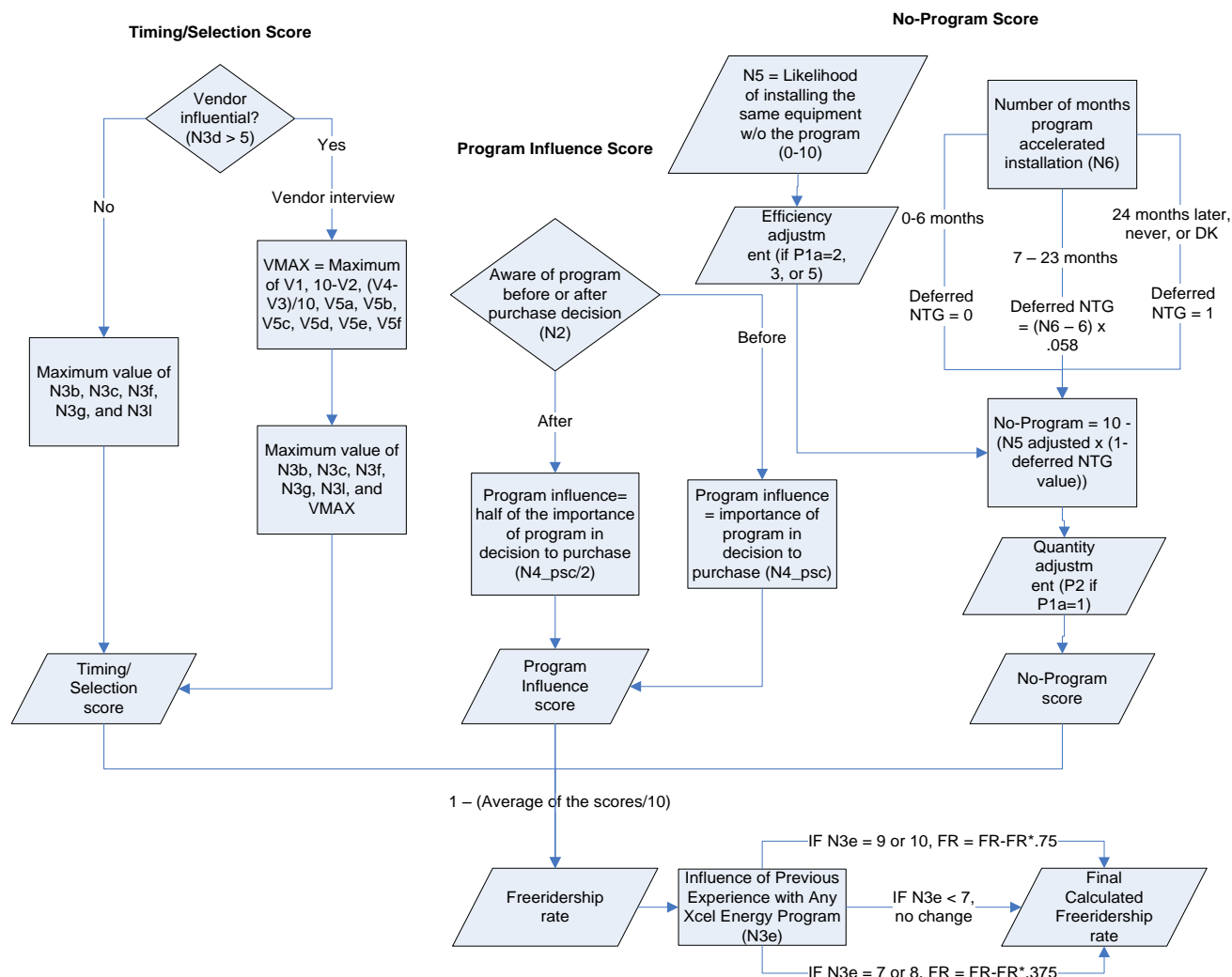
⁷ Methodological Framework for Using the Self-Report Approach to Estimating Net-to-Gross Ratios for Nonresidential Customers, Prepared for the Energy Division, California Public Utilities Commission by the Nonresidential Net-To-Gross Ratio Working Group, Revised May 8, 2009. This method estimates net-to-gross directly rather than estimating 1 minus free-ridership.



2. An overall **Program Influence** score that captures the perceived importance of the program (whether rebate, recommendation, program assistance or other information) in the decision to implement the specific measure(s) *relative* to the importance of non-program related factors (e.g., corporate policies prior to participation, environmental concerns, payback on investment before any program incentives). The overall program influence score is reduced by half if the respondent says they learned about the program only after they decided to install the program qualifying measure.
3. A **No-Program** score that captures the likelihood of various actions the customer might have taken at this time and in the future if the program had not been available. This score accounts for deferred free-ridership by capturing the likelihood that the customer would have installed program qualifying measures at a later date if the program had not been available. This score also accounts for quantity adjustment if the customer would have installed less program qualifying measures if the program had not been available.

The following flowchart documents the calculation of the self-report-based free-ridership.

Figure 6-1. Downstream Self-Report Free-ridership Flowchart



The participant survey also included a series of consistency check questions. These questions were reviewed by evaluators to assess consistency of response for each respondent across the multiple NTG indicators. Based on this review, some individual free-ridership scores were adjusted by evaluators to more accurately reflect the program's influence on the customer's decision-making process.

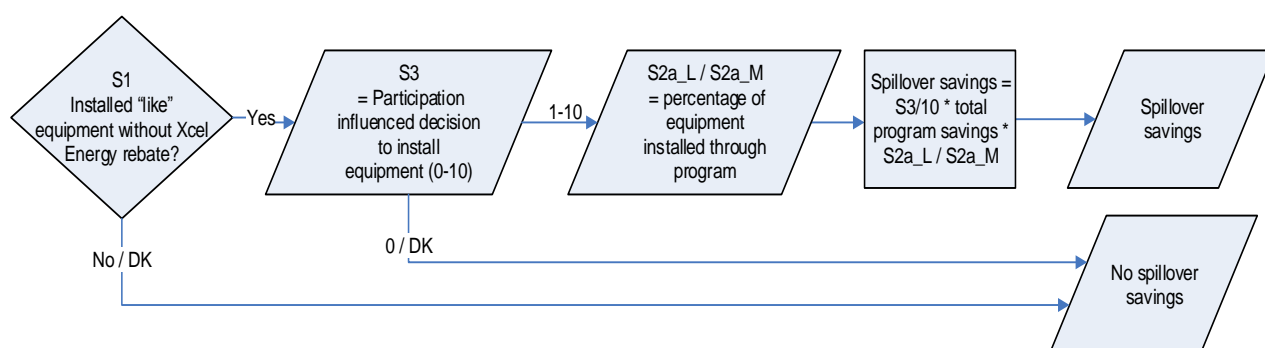
B. Participant spillover

The participant customer decision-maker survey includes a series of questions designed to measure participant spillover. These questions ask about recent purchases (since program participation) of any additional energy-efficient equipment of the same type as installed through the program that were made *without* any technical or financial assistance from the utility. A participant spillover estimate is computed based on how much more of the same energy-efficient equipment the participant installed outside the program and did so because of their experience with the program.

One of the issues with attempting to quantify spillover savings is how to value the savings of measures installed outside the program since we are relying on customer self-reports of the quantity and efficiency of any measures installed. We use a conservative approach and report only those measures installed outside the program that were of the same type and efficiency as the ones installed through the program. This approach allows customers to be more certain about whether the equipment they installed outside the program was the same type as the program equipment. This, in turn, makes it possible for us to use the estimated program savings for that measure (multiplied by the ratio of the quantity of equipment installed on their own versus through the program) to calculate the customer's spillover savings.

The following flowchart summarizes the algorithm used to calculate participant spillover rates.

Figure 6-2. Downstream Self-Report Participant Spillover Flowchart



The participant spillover rate is calculated as like spillover savings divided by the measure savings in the participant tracking data. A participant spillover rate was calculated for each participant surveyed at the measure-category level. Individual spillover rate results are weighted based on the claimed gross energy savings for each participant and the distribution of program population savings by measure-category.

C. *Nonparticipant spillover*

Nonparticipant spillover refers to energy efficient measures installed or services conducted by program nonparticipants due to the program's influence. The program can have an influence on design professionals and vendors as well as an influence on product availability, product acceptance, customer expectations, and other market effects. All may induce nonparticipants to buy more high-efficiency products than they would have in the absence of the program.

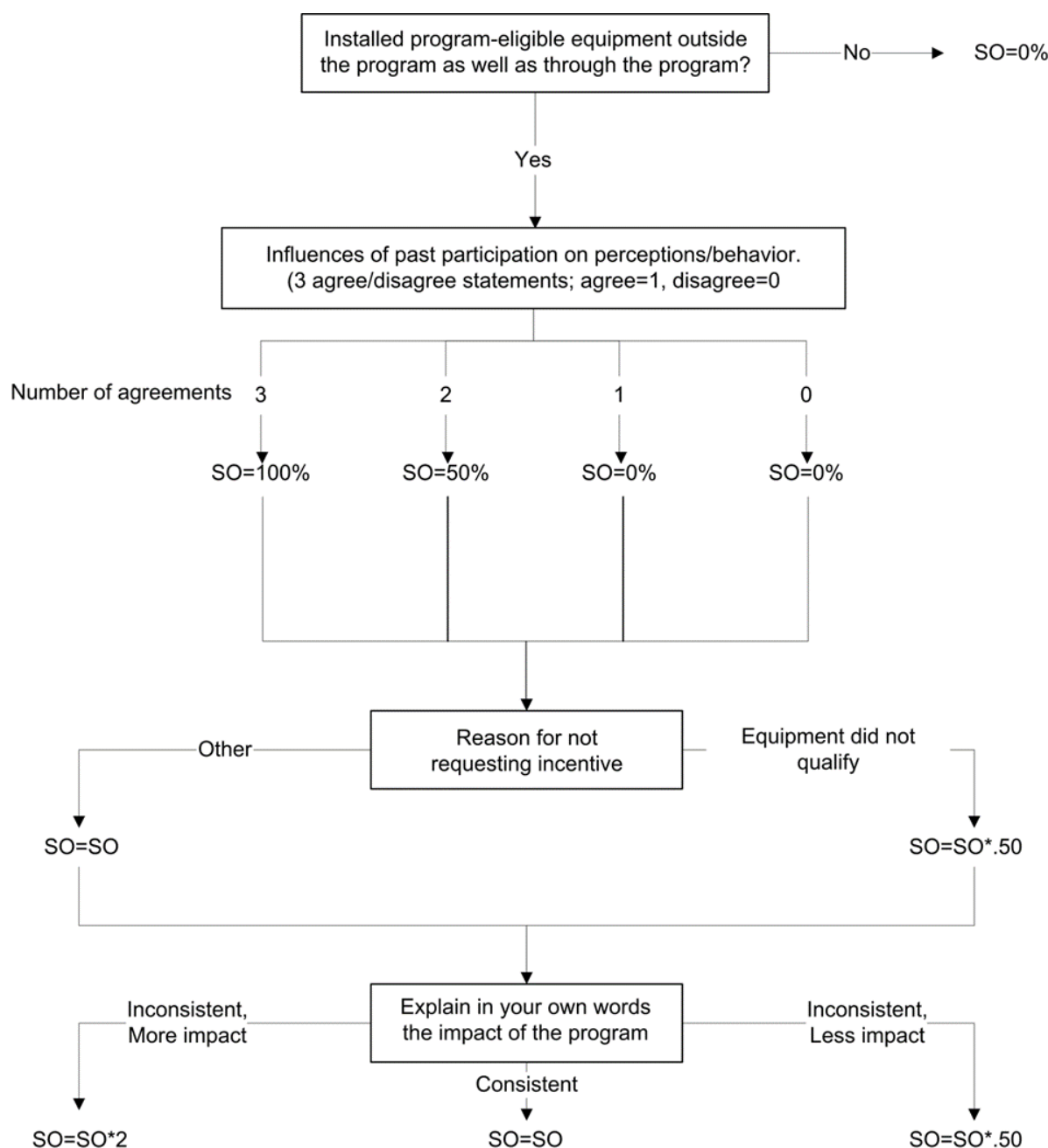
Nonparticipant spillover is estimated based on how much more of the same energy-efficient equipment the nonparticipant installed outside the program and the amount of influence the program had on the participating vendor. Only savings estimates above and beyond the participant estimate can be confidently attributed to nonparticipants.

Participating trade partner reports and influential vendor surveys were used as the primary method for assessing nonparticipant spillover. Participating trade partners and influential vendors were asked to estimate the percentage of program-eligible equipment they sold or installed under the period of evaluation that did not receive an incentive through an Xcel Energy program. The maximum possible spillover ratio is calculated as the percentage of eligible equipment that did not

receive an Xcel Energy rebate divided by the percentage of eligible equipment that received an Xcel Energy rebate during the same time period. To assign attribution for these installations we follow the Massachusetts protocol, which uses a series of agree/disagree questions to assess the causal effect of the program on vendors' actions.

The following flowchart summarizes the algorithm used to calculate vendor-reported spillover rates.

Figure 6-3. Downstream Vendor-Reported Spillover Flowchart



Vendor spillover rates were weighted by the contribution of program savings attributable to each vendor in the participant tracking data. For firms with multiple different respondents, the total savings attributed to the vendor firm were proportioned equally between the affiliated respondents.

Because vendor-reported spillover presumably includes both participant and nonparticipant spillover, one-half of the participant-reported spillover estimate is removed from vendor-reported spillover estimate to calculate the nonparticipant spillover estimate. This approach assumes that participants may purchase lighting at program vendors but also through other channels including retail stores and other venues:

$$\text{Nonparticipant spillover} = (\text{Vendor spillover} - (0.5 * \text{participant spillover}))$$

6.3.2 Direct install

The SRA NTG ratio for Direct Install (DI) projects was calculated using the following equation.

$$\text{NTG Ratio} = 100\% - \text{freeridership} + \text{spillover}$$

The survey respondents who received DI services were asked a short series of questions to determine whether they were planning to install the DI measures at the time they participated, whether they would have purchased and installed the measures on their own, and, if so, the type, quantity, and timing of the installations. The underlying logic is similar to the downstream approach; however, the questions and analysis are greatly simplified.

If the respondent reports that they were not planning to purchase and install the DI measures, then we assign a free-ridership score of 0 percent. On the other hand, if the respondent states they would have installed the same number of DI measures at the same time, then we assign a free-ridership score of 100 percent. Otherwise, we calculate a partial free-ridership rate based on their survey responses to questions regarding timing and measure quantity.

The spillover algorithm and question series were identical to that of the downstream program analysis.

6.3.3 Midstream LED Instant Rebate

The SRA NTG ratio for LED Instant Rebate projects was calculated using the following equation. Next we describe the methodological approach and calculation of each attribution factor in the SRA NTG ratio.

$$\text{NTG Ratio} = 100\% - \text{freeridership} + \text{spillover}$$

The primary research method for calculating the LED Instant Rebate program SRA NTG relied on interviews with participating trade partners, as these parties are best positioned to speak of the program's influence on sales of qualifying equipment market-wide. The team completed eight interviews with Colorado trade partner participants and seven with Minnesota trade partner participants. To improve the accuracy and robustness of the NTG estimate, the analysis leverages the results from all 15 trade partner interviews completed across both states to provide a single SRA NTG value for the LED Instant Rebate program. We believe a more robust single NTG estimate is more appropriate than separate territory-specific estimates considering the relatively



limited number of trade partners surveyed in each territory, the fact that this is a relatively new offering to both markets, and that the program is designed and delivered similarly in both territories.

A. *Free-ridership*

During the trade partner interviews, trade partners estimated the potential change in their 2015 sales of ENERGY STAR®-qualifying LEDs that would have occurred if the program discounts had not been available. We used that percentage change—whether it was an increase, decrease, or no change (i.e., zero percent change)—to calculate a free-ridership rate for each interviewee by subtracting the percentage change from 100 percent:

$$\text{Freeridership} = 100\% - \text{percentage change in absence of program}$$

We then weighted their individual free-ridership rates by their respective claimed gross energy savings (i.e., program-activity level) to arrive at an average overall program free-ridership rate.

B. *Spillover*

We asked LED Instant Rebate trade partners if they sell other LED products to Xcel Energy customers that are not eligible for an Xcel Energy discount, and if so, to estimate the percentage of those sales relative to their program sales. We then asked them to rate the program's level of influence on those outside sales "using a scale from 0-10, with 0 indicating no influence and 10 indicating a very strong influence, how influential is Xcel Energy's LED Instant Rebate program on your sales of LEDs that are NOT eligible for program discounts". We multiplied the two responses to estimate spillover values for each interviewee using the formula below.

$$\text{Spillover} = \text{percent of sales relative to program sales} * \text{level of program influence}$$

To arrive at an overall spillover value (accounting for both participant spillover and nonparticipant spillover) for the LED Instant Rebate program, we weighted their spillover values by the trade partners' claimed gross energy savings in the program tracking data.

C. *Customer self-reports*

The evaluation team also estimated NTG among LED Instant Rebate customer survey respondents using an approach that was nearly identical to the downstream customer approach. However, the LED Instant Rebate customer results are intended to serve only as qualitative information for added context and consideration of the primary NTG estimated via the trade partner interviews. The results were weighted by the customers' claimed gross energy savings to calculate overall free-ridership and spillover rates.

- While question wording was somewhat different, a customer's free-ridership score was also an average of the three decision-making related scores: timing and selection, program influence, and no-program scores. We used the same adjustment factor to reflect the importance of previous Xcel Energy program experience, but unlike the downstream approach, influential vendor surveys were not available.
- The spillover approach used the same battery of questions as the downstream survey, asking about recent purchases: how many more or fewer LEDs the participant installed outside the program and the importance of customers' experiences with the program on those purchases.

Similar to the trade partner interviews, the participant survey analysis leverages the results from all 39 LED Instant Rebate surveys completed across both Colorado and Minnesota to improve the accuracy and robustness of the NTG estimate for the LED Instant Rebate program.

6.4 RESULTS

Next, we present SRA NTG results for the Colorado Small Business Lighting program by delivery channel. Results are weighted to adjust for proportional sampling differences, non-response, and gross energy savings.

6.4.1 Downstream rebate

A. Free-ridership

Table 6-3 summarizes the number of participants surveyed, population counts and savings, and free-ridership results by major downstream rebate measure category. Overall, the participant surveys resulted in free-ridership rate of 18.4 percent for the program. Free-ridership for controls was highest (36.2 percent); however, the precision level was also highest for this category—driven mostly by its small sample size (8 respondents). The fluorescent measures had the lowest free-ridership rate (13.2 percent). Representing the largest portions of both respondents and savings, the custom projects (16.6 percent) and LEDs (20.5 percent) drove the overall free-ridership rate.

Table 6-3. Downstream Rebate SRA Free-Ridership Results

Measure	Participant Premises Surveyed	Participant Population*	Population Gross Savings (kWh)	Free-ridership (FR)	Precision at the 90% Level
Custom	17	260	8,027,623	16.6%	±8.3%
Prescriptive-LED	55	445	6,263,185	20.5%	±3.9%
Prescriptive-Fluorescent	11	75	722,278	13.2%	±8.2%
Prescriptive-Controls	8	45	270,670	36.2%	±15.1%
Overall	91	667	15,283,756	18.4%	±3.1%

*Counts sum to greater than total because customers can participate in multiple strata.

i. Timing and selection score

The participant surveys resulted in a Timing and Selection score of 9.6 out of 10 (unweighted).⁸ Participant respondents indicated that a vendor's recommendation was influential in their decision to implement program measures for 75 of the 94 projects surveyed (using the criteria presented in Figure 6-1). Of these 75 respondents, we were able to obtain vendor contact information and complete 21 influential vendor surveys from 18 unique vendor contacts. The average vendor score (VMAX in Figure 6-1) resulting from these surveys was 8.9.

⁸ A Timing and Selection score was not able to be calculated for two respondents due to "Don't know" responses.

For participants who indicated a vendor recommendation was influential in their decision, but we were unable to interview the vendor, we imputed the mean vendor score (VMAX in Figure 6-1) from all influential vendor interviews that were completed for the Small Business Lighting program. Not imputing a vendor score for these cases would systematically exclude the importance of the vendor's recommendations from the free-ridership scores for these participants.

On average, participants rated the availability of the program rebate as being the most important of all program-related factors in their decision to install their program-qualifying lighting (average rating of 9.0 out of 10 from 89 respondents). The information provided through an Xcel Energy study, audit, or other technical assistance was rated the next most important program-related factor (average rating of 8.2 out of 10 from 32 respondents).

ii. Program influence score

The Program Influence score was the lowest of the three attribution scores at 5.1 out of 10 (unweighted)⁹. The participant survey asked decision-makers to rate the importance of the program compared to the most important non-program related factor¹⁰ in their decision to implement the rebated measure, splitting a total of 10 influence points between the program and non-program related factors. Participants gave an average rating of 5.5 for the program and 4.5 for the non-program factors. On average, the most important non-program decision-making factor was the payback on investment before any Xcel Energy rebates (average rating of 7.4 out of 10). The second most important non-program decision-making factor was general concerns about the environment, global warming, and/or energy independence (average rating of 6.2 out of 10).

Twelve of 94 participants said they heard about the program only after they had made the final decision to purchase the program-qualifying measures. As discussed above, the Program Influence score is halved for these participants.

iii. No-program score

The average No-Program score was 7.6 out of 10 (unweighted)¹¹. On average, participants rated the likelihood of installing the same equipment if the Small Business Lighting program had not been available as 6.4, on a scale of 0 to 10 with 0 being "not at all likely" and 10 being "extremely likely". However, over one-half of respondents (56 percent) said they would have likely delayed installation if the program had not been available, ranging from one month to six years later. Three participants (4 percent) said they would never have installed the same equipment if the program had not been available.

When asked what they most likely would have done had the program not been available, one-third of participants (32 percent) reported they would have most likely installed the exact same equipment. Nearly one in five participants (18 percent) said they would have most likely installed standard efficiency equipment or equipment more efficient than required by code, but less efficient than what was installed through the program. Nearly one-third of participants (30 percent) said they would have done nothing or kept the existing equipment as is. For those respondents who said they would have done nothing or kept the existing equipment as is in the absence of the program, we

⁹ A Program Influence score was not able to be calculated for one respondent due to "Don't know" responses.

¹⁰ If the respondent gave the highest rating to multiple non-program factors, the respondent was asked to compare the program to "factors outside of the program".

¹¹ A No-Program score was not able to be calculated for one respondent due to "Don't know" responses.

adjusted their response to question N5 as shown in Figure 6-1 to a 0 out of 10 regarding the likelihood that their company would have installed the exact same lighting if the program had not been available. This adjustment effectively set the participant's No-Program score to 10 for those 28 respondents. For those who would have installed less efficient equipment, we adjusted their response to question N5 by half, effectively increasing their No-Program score by the same magnitude.

iv. Previous program experience

Finally, we examined how participants ranked the importance of past participation in any Xcel Energy demand-side management program in their decision to implement the program-qualifying lighting equipment. The Massachusetts standardized methodology includes an adjustment for previous program participation in the NTG ratio, as it recognizes the importance that past participation may have had on the current project.

If participants rated their past experience with the program as high (a 9 or a 10 on a scale of 0–10 with 10 being “very important”), we reduced their free-ridership rate by 75 percent (for 10 of 94 participants). If they rated the importance of their past experience with the program as a 7 or 8, we reduced their free-ridership rate by 37.5 percent (for 13 of 94 participants). Lower ratings of the importance of previous program experience did not receive any adjustment. This adjustment resulted in the final calculated free-ridership rate detailed in the last step of Figure 6-1.

The adjustment for previous program experience decreased the overall (weighted) free-ridership rate from 20.8 percent to 18.1 percent.

v. Review of participant comments

In addition to the structured SRA survey questions used to calculate the NTG ratio, participants were asked to tell us in their own words what influence the program had on their decision to implement program rebated measures. Respondents' open-ended responses were generally consistent with their calculated SRA NTG ratio, with the exception of four participants whose free-ridership scores were adjusted based on information provided across two consistency-check questions and the open-ended response. When these four free-ridership scores were adjusted, the weighted free-ridership score increased from 18.1 percent to 18.4 percent.

Respondents attributing high influence to the program in their decision-making process emphasized the importance of the rebate in influencing the customers' approval process and increasing the viability of projects. A couple of respondents also emphasized the importance of technical assistance provided by Xcel Energy through the energy assessments. Below are a few specific comments from participants:

“With the help of Xcel Energy and our contractor, we were able to come up with a number to make [installing energy-efficient lighting] cost effective at [the time of participation].”

“Through the energy audit, we were educated on the benefits besides just the monetary savings, which led to getting a better product which will last longer.”

“It was very influential in what we did; we became aware of not just the savings in relation to energy use but also in relation to the program providing rebates. Being a church, [our budget is very tight], so when there's a rebate that's very important [for our decision to install energy-efficient lighting].”



"[The program] was very helpful; we moved up the project by a few years because of energy savings.

"Rebates were the most significant [reason], but the technical assistance was also a major reason [we installed energy-efficient lighting]."

"[The program was a big influence], we looked over the audit and learned we were wasting a lot of energy – we hadn't known that."

"The program helped to make the project viable, and rebates and return on the investments made [the project] valuable to our corporation."

At the same time, responses from a few customers revealed evidence of some free-ridership, largely due to existing plans to implement the energy efficient equipment regardless of the rebate. Below are a few quotes from participants with higher free-ridership rates:

"I was looking for something more efficient to light my warehouse and save energy, [and the rebate] was a nice surprise."

"[The program] had no influence. It was just something after the fact that was nice."

"It was appreciated, but it probably wasn't influential. We were doing what we were doing [regardless]."

vi. Sensitivity analysis

We ran a sensitivity analysis that gave more weight to the Timing and Selection score if the customer rated the influence of their vendor's recommendation higher than any program-related aspect. This change resulted in less than a 1 percent change to the free-ridership score. This weighting system would slightly decrease the (weighted) free-ridership score from 18.4 percent to 18.3 percent, if it were applied.

B. Participant spillover

Table 6-4 summarizes the number of participants surveyed, population counts and savings, and participant spillover results by major downstream rebate measure category. Fifteen percent of respondents reported implementing additional similar program-qualifying equipment in facilities located within Xcel Energy's territory on their own without any financial assistance from Xcel Energy. When asked to rate their agreement with the statement, "My past experience with Xcel Energy's programs influenced my decision to install or implement these improvements on my own," on a 0-to-10 scale with 0 being "strongly disagree" and 10 being "strongly agree," participants gave an average rating of 5.1. After weighting by program project savings, the participant surveys resulted in a participant spillover rate of 3.8 percent for the Small Business Lighting program.

Table 6-4. Downstream Rebate SRA Participant Spillover Results

Measure	Participant Premises Surveyed*	Participant Population	Population Gross Savings (kWh)	Participant Spillover (PS)	Precision at the 90% Level
Custom	17	260	8,027,623	1.3%	±9.6%
Prescriptive-LED	54	445	6,263,185	1.0%	±1.3%
Prescriptive-Fluorescent	11	75	722,278	32.0%	±10.7%
Prescriptive-Controls	8	45	270,670	0.0%	0.0%
Overall	90	667	15,283,756	3.8%	±2.2%

*One respondent was excluded from the analysis due to a “Don’t know” response; three others were not asked the series because they were duplicate contacts.

C. *Nonparticipant spillover*

Table 6-5 summarizes the vendor-reported spillover results and corresponding nonparticipant spillover estimate. Four of the influential vendors surveyed and two of the trade partners interviewed reported additional installations of program-qualifying equipment outside of the program,¹² resulting in an overall vendor-reported spillover rate of 5.6 percent attributable to the program (weighted by the program tracking energy savings attributable to each company). Because vendor-reported spillover presumably includes both participant and nonparticipant spillover, participant-reported spillover estimates must be removed from vendor-reported spillover to calculate the nonparticipant estimate. However, to account for customer purchases through channels other than program vendors, such as retail stores, only one-half of the participant-reported spillover is deducted. Subtracting one-half of participant-reported spillover (1.9 percent) results in a nonparticipant spillover estimate of 3.7 percent. This rate can be interpreted as an indication that an additional 3.7 percent of the overall gross program savings are occurring without program assistance as a result of the program’s influence on trade partners and customers.

Table 6-5. SRA Nonparticipant Spillover Results

Program	Participating Vendors Surveyed*	Vendor-Reported Spillover (VS)	Participant Spillover (PS)	Nonparticipant Spillover (NS) (VS – PS)
CO Small Business Lighting	22	5.6%	3.8%	3.7%

*Two vendors responded to both the survey and interviews. Their responses and resulting spillover did not differ across efforts. We counted their responses only once in the analysis.

¹² One of the trade partner interviewees was excluded from the nonparticipant spillover analysis due to a “Don’t know” response.

D. Calculated SRA net-to-gross ratio

Table 6-6 summarizes the combined SRA NTG results for the Colorado Small Business Lighting downstream program. The self-report participant, influential vendor surveys, and trade partner interviews resulted in an overall NTG ratio of 89.1 percent for the program.

Table 6-6. Downstream Rebate SRA Net-to-Gross Results

Delivery Channel	Free-ridership (FR)	Participant Spillover (PS)	Nonparticipant Spillover (NS)	NTG Ratio (1 – FR + PS + NS)
Downstream Rebate	18.4%	3.8%	3.7%	89.1%

6.4.2 Direct install

The participant surveys resulted in a NTG ratio of 84.1 percent for the direct install component of the program, with an average free-ridership rate of 18.4 percent and spillover value of 2.5 percent (Table 6-7). Triangulation research suggests that a NTG ratio of 84.1 percent underestimates the program's influence; as a result, the team ultimately recommends that the direct install channel receive a NTG ratio of 90 percent.

Table 6-7. Direct Install SRA Net-to-Gross Results

Delivery Channel	Free-ridership (FR)	Participant Spillover (PS)	NTG Ratio (1 – FR + PS)
Direct Install	18.4%	2.5%	84.1%

Participants reported they were planning to install the direct install lighting measures in 10 of the 27 premises before they learned about the Small Business Lighting program, and seven of these participants indicated they would have purchased and installed the measure on their own had it not been installed through the program. The other 20 premises were assigned a free-ridership rate of 0 percent because participants reported they would not have installed those measures without the Small Business Lighting program.

Of those seven participants who indicated they would have purchased measures on their own, six reported they would have installed similar measures and four said they would have installed the same quantity of products installed by the program. One participant would have installed more products than those installed by the program, and two participants would have installed an average of 29 fewer products than those installed by the program. Six of seven participants reported they would have installed the lighting measures between six months to two or more years after they were installed by the program.

Nearly one-quarter (23 percent) of the 26 direct install respondents that answered the spillover question series reported installing additional similar program-qualifying equipment in facilities located within Xcel Energy's territory on their own. Using the same 0-to-10 scale, they gave an average rating of 6.0 when asked to rate their level of agreement with the statement, "My past experience with Xcel Energy's programs influenced my decision to install or implement these improvements on my own." After weighting by individual project savings, the participant surveys resulted in a participant spillover rate of 2.5 percent for the direct install component of the Small Business Lighting program (Table 6-8).

Table 6-8. Direct Install SRA Free-ridership and Spillover Results

Effect	Participant Premises Surveyed*	Participant Population	Population Gross Savings (kWh)	Estimate	Precision at the 90% Level
Free-ridership	27	267	1,604,497	18.4%	±9.3%
Spillover	26			2.5%	±3.8%

*One direct install premise (n=28) was excluded from the free-ridership calculations due to an interviewer error; two premises (n=28) were excluded from the spillover question series because they were represented by duplicate contacts.

6.4.3 Midstream LED Instant Rebate

A. Free-ridership

All eight Colorado trade partner interviewees said that their 2015 sales of ENERGY STAR®-qualifying LEDs would have been lower if the program rebates or incentives had not been available. On average, they estimated that the sales would have been 65 percent lower, with their estimates ranging from as low as 30 percent to as high as 100 percent. In the words of one distributor,

“I’m pretty sure they would be significantly lower, because we sell to the regional customers who have the lower budgets. I think it made a tremendous impact on our sales being able to provide this huge discount to our customers.”

We added the Minnesota trade partner interviewee responses to the Colorado responses in order to increase the sample size and improve both the accuracy and precision of the results. Weighting trade partners’ estimates by their respective program-activity level (i.e., claimed gross savings), we calculated a free-ridership rate of 38.7 percent (Table 6-9).

Table 6-9. Midstream LED Instant Rebate SRA Free-Ridership Results

Program	Trade Partners Interviewed	Participant Population	Population Gross Savings (kWh)	Free-ridership (FR)	Precision at the 90% Level
Colorado	8	56	15,419,840	36.3%	±16.4%
Minnesota	7	40	14,410,767	42.9%	±26.8%
Overall	15	96	29,830,607	38.7%	±13.6%

Most Colorado interviewees thought that the program’s level of influence varied by bulb type. However, just two Colorado trade partners provided examples: one found that program incentives are more effective at pushing many LED types (e.g., BR30s, A19s, candelabra bulbs, MR16s, and downlights), but are too low to increase sales of PAR38s; the other disagreed and thought that the program actually had a particularly strong influence on PAR38s (in addition to A-lamps).

B. Spillover

Six of the eight Colorado LED Instant Rebate trade partners sell other LED products that are not eligible for an Xcel Energy discount or rebate to Xcel Energy customers. Using a scale from 0-10,

with 0 indicating “no influence” and 10 indicating a “very strong influence,” four of these six trade partners thought that Xcel Energy’s LED Instant Rebate program influenced their sales of LEDs that are not eligible for program discounts, resulting in an average rating of 4.3 out of 10, providing ratings between 0.0 and 9.0.

These four interviewees estimated that their outside sales are equivalent to between 9 percent and 100 percent of their program sales; on average, they estimated that their outside sales are equivalent to 38 percent of program sales. After applying the influence ratings to the percentage of outside sales relative to program sales—resulting in spillover values for each interviewee that ranged from 0.0 to 60.0 percent—and incorporating the Minnesota trade partner responses, we weighted by the interviewees’ program-activity level and estimated an overall spillover value of 30.6 percent across both states (Table 6-10).

Table 6-10. Midstream LED Instant Rebate SRA Participant Spillover Results

Program	Trade Partners Interviewed	Participant Population	Population Gross Savings (kWh)	Spillover	Precision at the 90% Level
Colorado	8	56	15,419,840	41.2%	±15.3%
Minnesota	7	40	14,410,767	11.3%	±201.5% ¹
Overall	15	96	29,830,607	30.6%	±85.5%

The wide precision range is driven by one respondent who reported ten times more work outside the program than inside the program and gave the program an attribution rating of 6 out of 10. However, this trade partner accounted for the lowest amount of savings across all respondents. Excluding this respondent only decreases the overall spillover from 31% to 29% but narrows the precision range considerably — from ±85% to ±10%.

The overall spillover estimate of 30.6 percent is driven by one Colorado interviewee whose firm accounted for over one-half of the claimed gross energy savings from all Colorado interviewees and reported that his company sold equally as many LED products outside the program as inside the program (the only trade partner who did so) and rated the program’s influence as a 6.0. The interviewee explained how the program is factored into customers’ decision-making processes—that customers are drawn to purchase program-eligible products because of the incentives, but then buy other LED products that they did not plan to purchase even though they are not eligible for the program.

While a spillover value of 30.6 percent seems high, a 2015 LED spillover study in Massachusetts estimated a spillover value of 64 percent suggesting that this value may in fact be reasonable given the rapidly growing LED market.¹³ It is worth noting that the Massachusetts Technical Reference Manual¹⁴ decreases the spillover rate each year by 5 percent, likely to reflect the evolving LED market and reduced opportunity for spillover as LEDs become more of a standard practice.

¹³ *Final Report of Massachusetts LED Spillover Analysis*. Prepared by DNV GL. Prepared for Massachusetts Program Administrators and Energy Efficiency Advisory Council. September 24, 2015.

¹⁴ Massachusetts Technical Reference Manual. 2016-2018 Program Years. October 2015.



C. Customer self-reports

The LED Instant Rebate customer results are intended to serve only as qualitative information for added context and consideration of the primary NTG estimated via the participating trade partner interviews. The LED Instant Rebate participant customer surveys resulted in an overall NTG ratio of 75.0 percent for the Colorado and Minnesota LED Instant Rebate program.

i. Free-ridership

The LED Instant Rebate customers' responses regarding 39 participating premises across both Colorado and Minnesota resulted in a free-ridership rate of 25.0 percent. We calculated this rate using nearly the same algorithm as the downstream customer survey estimate which was based on three scores:

- The Timing and Selection score was 9.1 out of 10 (unweighted) among Colorado LED Instant Rebate customers. On average, the most important of all factors in Colorado customers' decision to install their program-qualifying LEDs was the availability of the Xcel Energy discount (average rating of 8.9 among 14 premises) and previous experiences with Xcel Energy programs (average of 8.5 among 8 premises). For nearly all Colorado premises (12 of 14), respondents indicated that a vendor's recommendation was influential (rating greater than 5 out of 10) in their decision to implement program measures, providing an average rating of 6.9 (however, the LED Instant Rebate surveys did not lead to influential vendor surveys).
- The Program Influence score among Colorado LED Instant Rebate customers was much lower at 4.6 out of 10 (unweighted). They gave average ratings of 5.0 for both the importance of the program and the most important non-program related factor in their decision to purchase the discounted LEDs. On average, the most important non-program decision-making factor was the payback on investment before any Xcel Energy rebates (average rating of 7.2 out of 10). Two Colorado respondents heard about the program after they made the final decision to install the program-qualifying equipment.
- Colorado LED Instant Rebate customers' average No-Program score was the lowest of all three of their scores at an average of 4.2 out of 10 (unweighted). On average, participants rated the likelihood of purchasing LEDs over regular lightbulbs if the discount had not been available as a 5.9, on a scale of 0 to 10 with 0 being "not at all likely" and 10 being "extremely likely". While only one Colorado LED Instant Rebate premise was not at all likely (a rating of 0), the respondents estimated that the other 13 premises, on average, would have installed the LEDs within four months in the absence of the program discount; none thought they would wait one year or longer. When asked what they most likely would have done had the program not been available, Colorado LED Instant Rebate respondents were split, most often saying they would have installed less efficient bulbs (7 of 14 premises) or the same number of LEDs (5 premises).
- The preliminary free-ridership rate among Colorado customers—based on the weighted average of these scores—was 31.9 percent. Using the same approach as with the downstream surveys, we adjusted this figure with customers' rankings of the importance of past participation in any Xcel Energy program in their decision to purchase the LEDs—if the past program experience had greater importance then we reduced their free-ridership rate. Among Colorado customers, the adjusted free-ridership rate was calculated to equal

29.4 percent. When combined with the Minnesota customers' adjusted free-ridership rates the adjusted free-ridership rate for the joint LED Instant Rebate program was 25.0 percent.

ii. Spillover

As mentioned previously, the customer spillover questions and analysis were identical to the downstream approach. Again, the LED Instant Rebate customer spillover survey results will only be used to inform the trade partner NTG results, which will serve as the primary approach. Respondents for three of the 14 Colorado premises reported installing the same LEDs in facilities located within Xcel Energy's territory in Colorado on their own without any financial assistance from Xcel Energy. Two respondents thought their past experience with Xcel Energy's programs strongly influenced (ratings of 9+ out of 10) their decision to install LEDs without program support—both said that they installed 10 percent of the number of LEDs outside the program as they did inside the program. After weighting by the gross program savings values, the participant surveys resulted in a participant spillover rate of 1.5 percent among Colorado LED Instant Rebate customers. When combined with the Minnesota customer spillover rates, the spillover rate for the joint LED Instant Rebate program was 0.03 percent.

D. Calculated SRA net-to-gross ratio

The primary research method for calculating the LED Instant Rebate program SRA NTG relied on interviews with participating trade partners, as they are best positioned to speak of the program's influence on sales of qualifying equipment market-wide to both participating and non-participating customers. Table 6-11 summarizes the combined SRA NTG results for the LED Instant Rebate program channel. The trade partner interviews resulted in a SRA NTG ratio of 92.0 percent. Confirming the presence of free-ridership, the customer surveys resulted in a SRA NTG ratio of 75.0 percent. Spillover was much lower among customers than trade partners, likely because the small sample size of customers was considering only their own facilities, whereas trade partners are considering all of their customers—both participants and non-participants.

Table 6-11. Midstream LED Instant Rebate SRA Net-to-Gross Results

Methodology	Approach	Free-ridership (FR)	Spillover (SP)	NTG Ratio (1 – FR + SP)
Trade partner Interviews	Primary	38.7%	30.6%	92.0%
Customer Surveys	Secondary	25.0%	0.03%	75.0%

6.5 ADDITIONAL TRIANGULATION RESEARCH

As discussed in the introduction, the recommended NTG ratio is based on a triangulation or preponderance of evidence approach. This section summarizes findings from additional analysis of the influential vendor surveys, qualitative trade partner interviews, nonparticipant surveys, benchmarking information, and future program considerations.

Findings from the benchmarking review, a limited customer-report sample size (28 customer self-reports), and the known dynamics involved in direct install programs suggest that the calculated SRA NTG ratio for the direct install channel (84 percent) likely underestimates the program's influence. As a result, we suggest an increased NTG ratio (90 percent) for the direct install channel; we offer additional details in the Benchmarking review discussion below.



The triangulation research findings for the downstream and LED Instant Rebate are generally consistent with the self-report results from participants, influential vendors, and trade partners. Therefore, we do not recommend any adjustments to the SRA NTG ratios for these two programs.

6.5.1 Market transformation indicators from influential vendor surveys

Influential vendors' responses were in line with the quantitative results of the interviews and surveys: while they reported that the program is an influential factor in their promotion of program-qualifying equipment there are also some other factors that also play a role. In addition to the program offerings, vendors mentioned that energy savings, energy independence, the environment and ROI influence the recommendations that they make for program-qualifying lighting measures. They rated the influence of the program, including incentives, program services, events and information from Xcel Energy on their decision to recommend the purchase or installation of the program-qualifying measures to a customer as 6.6 on a scale of 1 to 10. On average, the vendors rated their likelihood to recommend the specific measure to the customer had the program not been available as a 7.1 out of 10. Vendors also described impacts of the program and experiences with the program; one indicated previous participation in the LED Instant Rebate program helped them navigate their first experience participating in the Small Business Lighting program. However, another vendor reported recommending cheaper, poorer-quality fixtures to customers due to reductions in rebate amounts.

6.5.2 Trade partner views

All trade partner interviewees believed that the program influenced their sales and/or installations and nearly all believed that the program increased the size and/or number of lighting projects. In addition, interviewees reported a significant increase in their sales since first participating in the program. Most said that they actively leverage the program to increase the attractiveness of their projects, several called the program “an in” to engaging customers into working with them, and others found success resulting from the customer leads that the program provides. A few thought it made their companies more competitive in the market. Interviewees speculated that the program will play a significant role in the market transition to LEDs in the next two years as, in their experience, the program already is a pivotal factor in customers' decision-making.

6.5.3 Nonparticipant surveys

About one-half of the eligible nonparticipant respondents were aware of Xcel Energy's energy efficiency programs (18 of 34). Of these 18 respondents, ten said they were aware of the Small Business Lighting program specifically after given a description of the program. In addition, energy efficient lighting was the most commonly mentioned upgrade implemented or considered by nonparticipants in the past two years, reported by nearly 60 percent of respondents. Over one-quarter of respondents reported installing energy efficient lighting in the past two years (27 percent), and an additional 32 percent of respondents nearly one-third said they have considered installing energy efficient lighting. While findings from the nonparticipant surveys cannot validate self-reported free-ridership results from participants, they do suggest that some business customers implement energy efficient lighting on their own without financial or technical assistance from Xcel Energy, which is consistent with the SRA free-ridership and spillover results.

6.5.4 Benchmarking review

The team found NTG analyses for comparable Duke Energy and PECO direct install programs against which to benchmark the Xcel Energy's Colorado Small Business Lighting direct install program results.

Duke Energy tracks NTG at the program level, which are derived from third-party EM&V evaluations, typically conducted annually. The most recent analysis for the Small Business Energy Saver (SBES) program is from November 2015 for the 2014 program year.¹⁵ SBES participants were surveyed to estimate free-ridership and spillover. To estimate free-ridership, participants were asked to rate their likelihood of purchasing equivalent efficient lighting in the absence of the SBES program, their prior plans to install equivalent efficient lighting, and the importance of the program in their decision-making. To estimate spillover, the asked participants whether they installed any energy efficiency measures not reported to the program, and, if they had, to estimate the energy savings of these measures, and then to estimate the importance of the program in their decision to install these additional measures. This approach yielded a free-ridership rate of 4 percent, spillover of 0 percent, and therefore an overall NTG ratio of 96 percent.

PECO's evaluator tracks NTG at the measure, program, and portfolio level, but reports at the portfolio level to the regulatory commission. The most recent estimates for these metrics are for the June 2013 – May 2014 period.¹⁶ The estimates are 10 percent for free-ridership, 0.2 percent for spillover, resulting in an overall NTG ratio of 90 percent for the Smart Business Solutions program. These estimates were based on file reviews of fifty participants and telephone surveys with twenty of these participants.

¹⁵ Navigant. 2014 EM&V Report for the Small Business Energy Saver Program. 2015.

¹⁶ Statewide Evaluation Team. Act 129 Statewide Evaluator Annual Report, Program Year 5. 2015.

Table 6-12. Small Business Direct Install Benchmarking Comparison

Program Administrator	Program Name	Delivery Mechanism	Measures	Participant Eligibility Requirements	NTG Values and Methods	Survey Sample Size
Xcel Energy	Small Business Lighting	Direct install	Lighting, water heating	Peak demand ≤ 400 kW (targets customers ≤ 200 kW)	84% (-18% free ridership, +3% spillover) based on participant surveys	Surveyed 28 of 267 participants
Duke Energy Progress	Small Business Energy Saver	Direct install	Lighting (94% of savings) and refrigeration, some controls	Annual demand ≤ 100 kW	96% (-4% free ridership, +0% spillover) for PY2014, based on participant surveys	Surveyed 154 of 1,759 participants
PECO	Smart Business Solutions	Direct install	Lighting (92% of savings), refrigeration, electric water heating	Annual demand ≤ 100 kW	90% (-10% free ridership, +0% spillover) for PY5 (6/13-5/14); based on file review and participant surveys	Surveyed 20 of 417 participants

Based on the benchmarking results (96 percent for Duke Energy and 90 percent for PECO) and a few other factors, we suggest that the direct install SRA results likely underestimates the SBL direct install program's influence:

- The SRA results found the same free-ridership rates of 18 percent for both the downstream rebate component and the direct install component. However, direct install measures are provided to customers free of cost and are directly installed by the program, all else equal, we would expect lower levels of free-ridership for direct install measures compared to rebated measures.
- Unlike the downstream survey, the SRA NTG estimate of 84 percent for the SBL direct install channel is based on a relatively limited sample (28 customer self-reports), yielding an overall free-ridership estimate of 18 percent with a precision-level of ± 9.3 percent at the 90 percent confidence level. The downstream component had a more robust participant sample and therefore improved precision.

With these considerations in mind, the evaluation team feels an upward adjustment to the calculated NTG ratio is warranted for the direct install channel, though the program's current planning estimate of 100 percent is likely too high. Given the customer self-report and benchmarking research, we recommend using a NTG ratio of 90 percent for the direct install component, based on an average of the SRA results and the two benchmarked programs' NTG estimates (84, 90, and 96 percent).

6.5.5 Known future program changes

The evaluation team is currently not aware of any anticipated program design or delivery changes that are likely to affect program attribution.

7. BENCHMARKING RESEARCH

This section provides summary findings from peer-utility benchmarking research conducted as part of the evaluation of Xcel Energy's Colorado Small Business Lighting program.

7.1 INTRODUCTION

This benchmarking study characterizes utility programs identified by Xcel Energy to review and compare against the Colorado Small Business Lighting program. The benchmarking research focused on gathering the following types of information:

- *Program Design*: Program scope and goals, eligible measures, incentive structure, incentive levels, technical assistance, and participant eligibility requirements
- *Program Implementation and Delivery*: Program procedures, staffing, marketing and recruitment strategies, trade partner outreach, participation processes, and key challenges and successes
- *Market Response*: Barriers to participation, strategies for overcoming barriers to participation, and the role of the program in the marketplace
- *Net-to-Gross Assumptions*: Net-to-gross factors (freeridership, spillover), and data sources.

The benchmarking research was conducted using a combination of Internet searches, email inquiries, and telephone interviews with utility program staff. The secondary research provided high-level program information and detailed prescriptive measure offerings and rebate levels for the five utility programs of interest identified by the evaluation team and Xcel Energy staff. In addition, three in-depth interviews were conducted with program staff to obtain further insight into program design and implementation. The secondary research and in-depth interviews were conducted from May through July of 2016. Interviews were conducted with program managers at the following organizations:

- Duke Energy/Duke Energy Progress (Duke Energy)
- PECO
- Puget Sound Energy (PSE).

We were unable to complete interviews with program managers at Pacific Gas & Electric and Southern California Edison. However, we include some data on these programs from publicly-available information sources.

Table 7-1. Utility Comparison

Program Administrator	Service Territory	Number of Commercial Customers ¹⁷
Xcel Energy	Colorado	212,029
Duke Energy	North and South Carolina, Ohio, Kentucky, Indiana	636,756 ¹⁸
PECO	Philadelphia, PA region	80,099
Puget Sound Energy	Puget Sound region, Washington	130,010
Pacific Gas & Electric	Northern and Central California	574,064
Southern California Edison	Southern California	585,170

7.2 KEY FINDINGS

The benchmarking study identified the following key findings and standard practices:

- *Utilities generally offer a similar portfolio of lighting programs as Xcel Energy.* Most utilities offer a similar array of commercial lighting programs as Xcel Energy, including custom, prescriptive, small business, and instant rebate tracks. However, PSE has worked to consolidate its separate programs in order to reduce confusion and simplify participation among its customers.
- *Program administrators typically offer comprehensive small business programs.* Other program administrators offer comprehensive programs for small business customers that cover multiple technologies, including lighting, refrigeration, and water heating. Comprehensive programs operated by a knowledgeable implementation contractor can reduce customer confusion and be more adaptable as the lighting market evolves to offer smaller savings opportunities.
- *The rapidly evolving lighting market poses a challenge for programs, depending upon the regulatory requirements.* To incorporate new measures, PECO must submit a new plan filing with their regulatory commission which can take nine to twelve months. However, PSE utilizes pre-approved lists from the Lighting Design Lab, the Design Lights Consortium, and ENERGY STAR®. In addition, PSE maintains a list of products sold in their region which have been approved during previous custom project applications.
- *Overlap in measures and customers appears to be a common issue.* Similar to Xcel Energy, other program administrators also face the issue of customers being eligible for similar measures offered by multiple different programs. However, program managers do not appear particularly concerned about this issue as the small business programs are designed to facilitate participation by an under-served class of customers. Strategies to limit overlap include consolidating programs and offering similar incentive levels for the same measures offered through multiple programs.
- *Small business direct install (SBDI) programs simplify application procedures compared to prescriptive programs.* For SBDI programs, the implementation contractor typically handles

¹⁷ EIA; December 2015.

¹⁸ Includes North and South Carolina, Ohio, Kentucky, Indiana.



the entire application process for the customer; therefore, there are relatively few issues. However, PECO encounters frequent problems with obtaining correctly completed prescriptive applications, and their implementation staff need to work closely with customers and trade partners to address any issues. Online applications and education of trade partners have helped reduce these problems.

- *Program managers held differing perspectives on future growth opportunities for small business programs.* Their suggestions include lighting controls, smart/demand response technologies, non-lighting measures and expanding eligibility to include slightly larger customers who may still require supplemental assistance.
- *Net-to-Gross estimates for other small business programs researched are comparable with Xcel Energy's program.* NTG ratios ranged from 0.90 to 0.96 for the small business programs researched, which is similar to current estimates used for Xcel Energy's program.

7.3 DETAILED FINDINGS

Below are detailed findings from the benchmarking research.

The next table presents a summary of findings for each program included in the benchmarking research.

Table 7-2. Program-Specific Benchmarking Research Findings

Program Administrator	Program Name	Measures and Incentives	Incentive Levels	Participant Eligibility Requirements	NTG Assumptions and Methods	Comparability to Xcel Energy's Program	Program Staff Interviewed
<i>Xcel Energy</i>	<i>Small Business Lighting</i>	<i>Lighting</i>	<i>\$1 for 4ft T8; \$35-\$50 for LED downlight; \$4-\$10 for LED tube</i>	<i>Peak demand ≤400 kW</i>	<i>1.0 prescriptive, 0.96 custom (based on 2008 program evaluation)</i>	<i>N/A</i>	<i>Yes</i>
Duke Energy Progress	Small Business Energy Saver	Lighting and refrigeration, some controls.	Incentives based on kWh savings. Up to 80% of project cost.	Annual demand ≤100 kW	0.96 for PY2014, based on participant surveys.	High	Yes
PECO	Smart Business Solutions	Lighting, refrigeration, electric water heating	10%-90% of installation costs	Annual demand ≤100 kW	0.90 for PY5 (6/13-5/14); based on file review and participant surveys.	High	Yes
Puget Sound Energy	Small Business Direct Install (under Business Lighting Incentive Program)	Lighting, controls, refrigeration, water measures	Free/low-cost	<10,000 S.F.	Unknown	Medium	Yes
Duke Energy Progress	Energy Efficiency for Business (prescriptive/custom)	Lighting, HVAC, refrigeration, motors.	\$4 for 4ft T8; \$15 for 4ft LED tube or downlight; \$0.08/kWh for custom measures	Any business customer	0.99 for PY2014, based on participant surveys.	Low	No



Program Administrator	Program Name	Measures and Incentives	Incentive Levels	Participant Eligibility Requirements	NTG Assumptions and Methods	Comparability to Xcel Energy's Program	Program Staff Interviewed
Puget Sound Energy	Business Lighting Incentive Program (prescriptive/custom program)	Any products on LDL, DLC or ENERGY STAR® approved lists	\$0.20/kWh of savings up to 70% of total cost	Any business customer	Unknown	Low	Yes
Pacific Gas & Electric	Prescriptive, custom, and midstream	Lighting, HVAC, refrigeration, water heating, kitchen, agricultural equipment	\$1-\$1.50 for 4ft T8; For LED troffers, \$6-\$8/kilolumen; \$8-\$15.50 for LED downlights	Any business customer	0.60 for all downstream non-residential lighting programs; based on participant surveys	Low	No
Southern California Edison	Prescriptive and custom	Lighting, HVAC, refrigeration, water heating, kitchen, agricultural, office, process equipment	\$1 for 4ft T8; \$8-\$15/kilolumen for LED troffers; \$0.08/kWh for LED downlights	Any business customer	0.61 for all downstream non-residential lighting programs; based on participant surveys	Low	No

7.3.1 Program design

Duke Energy offers the Small Business Energy Saver (SBES) program, which is a small business direct install (SBDI) program with a comprehensive range of measures, in North and South Carolina, Ohio, and Kentucky, and they recently launched it in Indiana. Eligible customers must have 100 kW or less in annual demand, however, the typical customer is in the 25-50 kW range. Duke Energy developed the SBES program specifically to simplify the process for small business customers that faced barriers to participation in their prescriptive program. In addition to SBES, Duke Energy offers prescriptive and custom tracks in their Energy Efficiency for Business (EEB) program, which also provide incentives for a range of efficiency measures in addition to lighting.

PECO also offers a comprehensive SBDI program— Smart Business Solutions — in their Philadelphia-area service territory to customers with an annual demand of 100 kW or less, in addition to comprehensive prescriptive and custom programs.

Puget Sound Energy, serving the Puget Sound region of Washington State, offers an SBDI program for businesses with facilities 10,000 square feet or less as well as a Business Lighting Incentive Program and a midstream incentive program named Lighting to Go (LTG). This program structure is a recent development; prior to 2014, there were four separate programs for business customers. However, customers found this structure confusing. Therefore, PSE undertook a process of consolidation so that, as of 2016, there are two main business lighting programs: Business Lighting and Lighting to Go. The SBDI program is run through Business Lighting, though it has relatively few participants. Business Lighting acts as a combined prescriptive/custom program with a single application process. PSE also offers other technology- and industry-specific programs for commercial HVAC, laundry, kitchens, lodging, and new construction.

Table 7-3. Program Offerings

Program Administrator	Program Offerings	Is Small Business program Comprehensive or Technology-based?
Duke Energy	Small Business Energy Saver, Energy Efficiency for Business (prescriptive and custom), midstream	Comprehensive
PECO	Smart Business Solutions, prescriptive, custom	Comprehensive
Puget Sound Energy	Small Business Direct Install, Business Lighting Incentive Program (prescriptive/custom), Lighting-To-Go (midstream)	Comprehensive

A. Program goals

Duke Energy has both savings and participation goals for the SBES program, though the specific goal structure varies due to the differing requirements of the regulatory commissions in the states where the program operates.

PECO's Smart Business Solutions program had a goal of 37 GWh of savings for Phase II, which ran from June 2013 through May of 2016. They achieved 32 GWh, though this was a

planned reduction since the overall portfolio overachieved. PECO uses the Smart Business Solutions as a “throttle” program that can be ramped up or down as necessary to accommodate portfolio savings goals. They have raised the goal to 43 GWh for the current phase.

A voter initiative in Washington requires utilities to seek all cost-effective conservation measures. The current target is 40 GWh per year for the PSE Business Lighting program. Lighting to Go and other programs have separate targets, and they have flexibility in adjusting program targets to meet the overall portfolio goal.

B. Measures and savings

All of the reviewed programs offer a variety of efficient replacement lamps and fixtures for typical commercial lighting installations, including T8 and T5 linear fluorescent lamps and fixtures and LED replacement troffers, linear lamps, and exterior fixtures. The SBDI programs also include measures to improve the efficiency of refrigeration, HVAC, and water heating. See Table 7-2 for some example incentive levels.

Ninety-five percent of savings in Duke Energy’s SBES program come from lighting measures and five percent from commercial refrigeration. For the 2014 program year, the SBES program reported savings of 39 GWh with 1,759 participants, or 22.0 MWh per participant.¹⁹ Every measure that they offer in their prescriptive program is also available through SBES. T8 linear replacements represented the largest share of savings for the SBES program in PY2014 at 24 GWh, with LEDs accounting for another 10 GWh. Refrigeration, T5 lamps, delamping, and various other lighting and lighting control measures make up the balance. Duke Energy reported 55.1 GWh of verified savings for the prescriptive/custom EEB program for PY2014.²⁰ Ninety-one percent of these savings were from prescriptive lighting, six percent from custom measures, and the balance from prescriptive HVAC, refrigeration, and motors.

PECO designed the Smart Business Solutions program to achieve most savings from lighting, though there are also refrigeration and water saving measures (if water is electrically heated) available. In the most recent phase, lighting was responsible for about seventy-six percent of savings; HVAC measures accounted for eleven percent, about five percent came from refrigeration measures, and the remainder from consumer electronics, motors and drives, and water conservation measures. Previously, much of the lighting savings came from T5/T8 linear fluorescent replacement upgrades. However, the current phase includes linear LEDs with which they expect to see substantial uptake. The Smart Business Solutions program achieved 32 GWh of savings with 1,172 participants, 65.2 MWh per participant, during the most recent three-year program phase.²¹

PSE offers a range of lighting products through the Business Lighting program including LED fixtures and tubular/linear LEDs (TLEDs), but not screw-in LEDs, which are incentivized exclusively through the midstream Lighting to Go program. The SBDI program includes water saving and water heating measures in addition to lighting, though they do not advertise this program extensively and therefore it has relatively few participants.

¹⁹ Navigant. 2014 EM&V Report for the Small Business Energy Saver Program. 2015.

²⁰ Navigant. 2014 EM&V Report for the Energy Efficiency for Business Program. 2016.

²¹ Navigant. Quarterly Report to the Pennsylvania Public Utility Commission. 2016.

C. Process for approving new measures

At PECO any program measure must be included in the program plan filed with their regulatory commission. They work with their implementation and evaluation contractors to vet any new technologies. To incorporate a new measure, they must do a full new plan filing with the regulatory commission, which can take nine to twelve months, and is a hindrance to adding new measures.

PSE has greatly simplified the process of adding approved measures for their Business Lighting program. Their approved list includes any product approved by the Lighting Design Lab, the Design Lights Consortium, or ENERGY STAR®. Products in the midstream LTG program are limited largely to screw-in and linear LEDs. In addition to the lists of products maintained by the third-party certification groups, PSE maintains a list of products that they know are sold in their region and which have been approved for prior applications. Their application forms use this list to pre-populate fields in their digital application.

D. Linear baseline

Duke Energy's SBES program adopts an as-found baseline. For the prescriptive program, they have converted to a T8 baseline for linear lighting. In contrast, PECO used a T12 baseline in the recently concluded plan phase but has now switched to a T8 baseline. PSE uses a T8 baseline in the LTG program, but continues to claim savings for replaced T12s in Business Lighting (and therefore SBDI).

7.3.2 Incentives

A. Downstream incentives

With the exception of PSE, which offers a flat incentive of \$0.20/kWh of savings, the reviewed programs have detailed measure lists for their SBDI and prescriptive programs with set rebate levels depending on the particular type of fixture. The programs typically undertake a thorough vetting of measures that considers projected savings, incremental costs, payback periods, and other metrics when setting these incentive levels. Recently, the PSE program considered requiring participants to install controls in order to receive an incentive and also raise the incentive from \$0.20/kWh to \$0.25/kWh; however, they decided to continue with the current arrangement.

B. Midstream/upstream incentives

Duke Energy offers a midstream program under the umbrella of the prescriptive program, however, the interviewee was unable to provide any details. PECO will pilot a midstream program for non-lighting measures in their prescriptive program, but opted not to offer a midstream lighting program. They chose to de-emphasize lighting savings in favor of more comprehensive energy savings for their upcoming program phase. Lighting to Go is PSE's midstream program, and covers nearly all incentivized screw-in LEDs.

7.3.3 Project funding caps

Incentive levels are set for each measure offered through Duke Energy's SBES program, with a cap of eighty percent of the project cost. The average funding level is around sixty-five percent of the total project cost.

PECO's Small Business Solutions program does not cover a set percentage of project costs. However, the program is designed to deliver the customer as close to a one-year payback as possible without going below one year. Depending on the measures chosen by the customer, the percentage covered by the program can range from ten to ninety percent. There is no cap to rebate amounts.

7.3.4 Overlap with other programs

There is overlap between Duke Energy's SBES, prescriptive, and custom programs since there are not customer consumption cutoffs that limit eligibility to only one program. However, only customers with an annual demand of 100 kW or less are eligible for SBES while the prescriptive and custom programs typically cater to larger business customers. Duke Energy created the SBES program specifically to address the small business market and overcome barriers that exist for these customers in the prescriptive program. The Duke Energy interviewee expressed concern about upsetting the trade partners that drive participation in their prescriptive program by siphoning their customers to SBES as it is generally the best deal for qualifying customers.

The types of measures offered through the SBDI program are common across PECO's C&I programs, though the eligible products vary by program. PECO finds that customers under 100 kW are underserved by their prescriptive or custom programs, so they do not perceive the overlap affecting program goals. In the recently concluded phase of the program, a few customers eligible for SBDI did participate in the prescriptive program for particular measures available there.

PSE has tried to minimize program overlap as they have consolidated their programs in recent years. By removing all screw-in bulbs from the Business Lighting program, they limited overlap with the midstream Lighting to Go program to a small number of measures such as TLEDs. There is also some overlap for multi-family customers between residential and business programs. However, they have tried to maintain parity between these programs so that the customer receives the same incentives regardless of the program they choose.

7.3.5 Program implementation and delivery

A. Staffing

At Duke Energy, the program manager is the only Duke Energy staff member devoted exclusively to SBES. Additional support staff work with both SBES and other Duke Energy programs. In addition, there is an internal team of business energy advisors to advise medium-sized businesses for the prescriptive and custom programs. They also have trade partner outreach representatives that recruit and educate trade partners. The respondent from PECO manages all of their commercial and industrial efficiency programs. He/she supervises three program managers that oversee day-to-day program operations and vendors. At PSE, the interviewee manages the Business Lighting and SBDI programs, while another staff member manages the midstream incentive program.

Duke Energy uses third-party contractors Lime Energy (Carolinas) and SmartWatt Energy (Midwest) to implement the SBDI program. They conduct the energy audits and hire local subcontractors to do the installations. However, Duke Energy does use some in-house technicians in the Midwest. SmartWatt is also the implementation contractor for PECO's Smart Business Solutions program. PSE implements the Business Lighting program internally

with a staff of engineers, contract administrators, and a verification team. Their midstream Lighting to Go program is implemented by two outside firms, one that handles marketing and another that processes incentive payments.

B. Delivery

In Duke Energy's SBES program, their implementation contractors conduct free energy audits. These are not comprehensive energy audits, rather more like assessments designed to develop a scope of work for an energy efficiency project. Installation is done by local subcontractors to Lime Energy/SmartWatt. The implementation contractors also offer no-interest financing for projects.

PECO's SBDI implementation contractor conducts a full opportunity assessment when visiting prospective participants that includes lighting, HVAC, and refrigeration. PECO particularly likes that SmartWatt's energy advisors use tablet computers to do their assessments and can calculate savings on-site. They find that this approach enhances the customer experience. In addition, PECO favors the comprehensive opportunity assessment, where customers receive a consistent message about the full range of improvements available, rather than an approach where customers get information about available incentives for certain measures from a specialized vendor. The Smart Energy Solutions advisors are versed in the full range of measures available from PECO.

Internal PSE staff implement their Business Lighting program (which includes SBDI). A team of contract administrators processes applications and assigns them to engineers, who shepherd the projects from preapproval to completion.

Table 7-4. SBDI Program Delivery

Program Administrator	Delivery Method
Duke Energy	Third party implementer; Lime Energy or SmartWatt, depending on service territory.
PECO	Third party implementer; SmartWatt
Puget Sound Energy	Internal staff

7.3.6 Marketing and recruitment methods

The primary source of marketing and leads for Duke Energy's SBES program are the implementation contractors. Duke Energy maintains and updates a list of eligible small business customers and sends this to the vendors monthly, who then use the list to solicit participants. Duke Energy also does some in-house marketing including direct mail, however, these efforts generate a much smaller share of leads.

For their SBDI program, PECO identifies small business customers in their records, targeting certain zip codes, and sends the customer data to the implementation contractor. They try to spread their incentives throughout the entire service territory. The implementers do a lot of street canvassing and cold calls, focusing on "mom and pop"-type Main Street businesses, with limited mass marketing efforts. However, PECO has limited the ability of implementers to target national chain stores; if a franchise has more than ten locations, they are not eligible to participate in Smart Energy Solutions, though they can participate in the prescriptive program.

7.3.7 Application processes

For Duke Energy's SBES and PECO's Smart Energy Solutions program, the implementation contractors handle the entire application process for the customer. The contractor conducts the audit and prepares a proposal which includes the customer's cost. If the customer approves, the implementer fronts the incentive discount and is later reimbursed.

In PECO's prescriptive program, the customer fills out either an online spreadsheet or fillable PDF application and submits it to the implementation contractor. During the recently concluded program phase, prescriptive and custom program participants submitted about one-half of their applications online, with another third as emailed spreadsheets, and the balance on paper. PECO is currently developing a new online application. PECO encounters frequent problems with obtaining correctly completed applications from both customers and trade partners. Therefore, the implementation staff work closely with the customers and trade partners to address these application issues. However, the quality of trade partners' applications has improved dramatically over the last seven years, and PECO has made efforts to simplify the application process. In addition, online applications have helped and customers that complete multiple projects can transfer information between applications.

PECO has not found review time to be a problem for custom projects. Their engineers are able to review calculations during the preapproval process. The engineers receive updates throughout project installation and there are usually very few surprises.

PSE requires preapproval for all Business Lighting projects (including SBDI). They use an Excel-based application form, and all applications are submitted digitally. Project review times vary based on the ability of the contractor to properly fill out the application form. They have sometimes encountered applications where the claimed project savings exceed annual usage, therefore it is one of the first items reviewed.

7.3.8 Trade partners

Duke Energy utilizes trade partner outreach representatives to recruit and educate trade partners, which represent all typical trade partner fields (installation contractors, distributors, engineering consultants, study providers, etc.). They offer recognition awards to top trade partners and have done some cost-sharing for trade partner advertising if it includes information about incentives, however, they are careful to maintain neutrality.

PECO also works with the full range of trade partners, although lighting contractors comprise the largest portion. They offer a tier program to trade partners with silver, gold, and platinum levels that include financial incentives. Trade partners are required to attend training on the measures offered and application procedures, and PECO conducts forums to educate the trade partners and solicit feedback.

PSE also maintains a contractor network. To become a member, a contractor must do a minimum number of projects in PSE's service territory, undertake continuing education, and commit to resolving any customer issues that arise. PSE provides network members with training, an identification badge, and solicits their input on program design.

7.3.9 Market response

PECO has not encountered problems recruiting a sufficient number of participants to reach their Smart Energy Solutions savings goals. However, they have sometimes encountered skepticism from customers who think the program is too good to be true or customers who do

not have time to participate. Through their implementation contractor they encourage participation by offering one-year of no-interest financing or a five percent discount for paying up-front.

The PSE interviewee did not cite any barriers for participants to their Business Lighting program, other than some customers do not have Microsoft Excel available to complete the application form.

Table 7-5. Participants and Savings

Program Administrator	Program	Time Period	Participants	Savings per Participant (MWh)
Duke Energy	Small Business Energy Saver	2014	1,759	22.0
PECO	Smart Business Solutions	June 2014 – May 2016	1,172	27.2

7.3.10 Keys to success

One interviewee believes that the direct install model is the best method to target small business customers. The single vendor, pay-for-performance model provides control over both costs and the customer experience. This interviewee recommends including contract provisions with the implementation contractor on customer experience metrics such as customer satisfaction, results, and service levels. These contract provisions ensure that vendors are being tracked on key performance indicators.

Another interviewee emphasized simplifying the application procedures as much as possible for both customers and trade partners. In addition, PSE mentioned program streamlining and simplification which they have achieved by consolidating overlapping programs. PSE also has developed a list of qualified products that are actually sold in their region, which they draw from approved applications, to simplify their application and verification process.

7.3.11 Future opportunities, growth strategies, and challenges

The Duke Energy respondent sees opportunity to grow the SBES program by expanding eligibility. There are customers on the edge of eligibility that do not want to participate in the prescriptive program, and therefore would be good candidates for SBES. In addition, he sees smart/demand response-capable (DR) thermostats as an opportunity, as well as DR lighting.

PECO's growth strategy is to increase the uptake of non-lighting measures by demonstrating the merits of comprehensive savings plans. They plan to achieve this goal through outreach and education to trade partners and suppliers, who will then help customers identify opportunities and understand the potential return on efficiency investments. In the future, the respondent foresees challenges achieving their measure mix targets as PECO adjusts their savings goals to rely less on lighting.

PSE sees lighting controls as an opportunity to capture more savings in the future, perhaps through better education of contractors on the benefits of controls.



Table 7-6: Program Growth Strategies

Program Administrator	Strategy
Duke Energy Progress	Expand eligibility for SBDI to larger customers
PECO	Emphasize non-lighting measures
Puget Sound Energy	Emphasize lighting controls

APPENDIX A: PROGRAM STAFF INTERVIEW GUIDE

This topic guide was used for interviews with internal program staff involved in the administration and delivery of the program. While this guide served to offer consistent direction to the interviewer(s), interviews were tailored based on the specific roles and responsibilities of each interviewee.

Role within Xcel Energy and/or the Program(s)

- 1) Responsibilities or role regarding the program
 - when became involved
 - how have responsibilities/role changed over time
 - on average, what percent of your workload is spent on the program monthly?
- 2) Who do you interact with (others) regarding the program?
 - Other Xcel Energy staff, trade partners, customers, implementation contractors, other organizations
 - Roles and responsibilities of these other persons
 - Success of interactions; suggestions for improvements

Program Design and Marketing

- 3) Who was involved in the program design?
- 4) Was the program patterned after another program(s)? If so, were any modifications made to improve the program design?
- 5) How has the program design changed in the past couple of years? If yes, why did you make those changes? Were these changes driven internally or from external stakeholders?
- 6) Are you considering any design changes in the near future? If yes, why are you considering these changes? Are these considerations being driven internally or from external stakeholders?
- 7) Does the program have any other goals in addition to energy/demand savings and participation targets? How are program goals communicated internally and externally? How well has the program been performing in relation to goals? Why?
 - Market transformations objectives
 - Other goals?



- 8) Are there sufficient program resources to meet the programs goals? (Probe: Examples of resources are staff resources, incentives, program partners support, and marketing materials.)
- 9) Is there any overlap in the program's offerings or target markets with other Xcel Energy offerings? If so, does this overlap with other offerings or parties within the program structure create any challenges or barriers to implementing the program?
- 10) Do the incentive levels seem appropriate? If not, why not? What, if any, changes in the incentive levels do you think may be needed?
- 11) How does the type of equipment being purchased and installed through the program vary? Why do you think there is this variation?
- 12) What are the target markets for the program?
- 13) Who identifies prospective customers for the program and how are they identified?
- 14) What marketing activities are being used to reach the different target markets? How have these methods changed over time? How effective have each of these methods been in identifying and enrolling potential participants? Why?
- 15) Does your program use Xcel Energy's standard definition of a 'participant'. If not, how does it differ and why? Are your participants typically new to Xcel Energy DSM programs or have they previously participated in Xcel Energy programs?
- 16) How do you define nonparticipants? What seems to lead to lost opportunities or 'closed-losses'?
- 17) What are major barriers to participation?
 - why do you think customers choose to participate or not participate?
 - what are the comparative strengths of these reasons?
 - are the marketing efforts designed to build on customers' reasons for participation and minimize reasons for nonparticipation?
- 18) How would you describe the program's trade partner infrastructure? What types of trade partners are involved with the program? What role(s) do they play in the program?
- 19) How are trade partners recruited into the program? What makes your trade partners unique in their offerings due to the program?



Program Operations

- 20) What are the participation steps from the customer's perspective? Have these changed over time?
- 21) What is the overall quality/accuracy of the project applications that you receive? Have you taken any steps recently to improve the quality of these applications? What improvements are needed?
- 22) Describe your communications and working relationship with trade partners. What support is provided through the program to trade partners? In what areas could this be improved?
- 23) What is your perception of the level of customer satisfaction with the various aspects of the program (participation process, program application, measure performance, rebate processing, etc.)? How can satisfaction be improved?
- 24) What aspects of the program implementation are working well? Which are not working well?
- 25) What do you see as future challenges for the program?
- 26) Is the system used for tracking participants and nonparticipants helpful or not? What would be helpful to track that is not currently available? How easy is it to use the tracking system?

Program Impacts

- 27) (If applicable) What NTG ratio(s) is the program currently using for planning purposes? When and how were these estimates last evaluated?
- 28) Do you feel the program influences customer's decision-making process for certain projects/measures differently than others? How so?
- 29) How are you seeing the market transform through your trade partners and customers?
- What influence do you think the program had on these market changes? Why do you say that?
 - How has the program adapted to these market changes to sustain impacts?

Evaluation

- 30) What are your needs from this evaluation? What do you hope to learn from the evaluation?



31) Do you have any specific questions that you want to make sure are included in primary data collection activities with customers or market actors?

- Customer research (participants and nonparticipants)
- Trade partner interviews
- Benchmarking research

32) What time period of participation is most appropriate for defining the participant research population?

33) (If applicable) How should nonparticipants be defined for the evaluation research? What would be most useful for your needs (e.g., general population, closed-losses)

34) The evaluation results will be used in part to inform future program design and filings. Anything additional you would like evaluation to focus on with this objective in mind?

35) Other Suggestions for Improvements



APPENDIX B: PARTICIPANT CUSTOMER SURVEY INSTRUMENT

This structured questionnaire was used for computer-assisted telephone interviews (CATI) with participant customers for the 2016 evaluations of the Colorado Small Business Lighting program and Minnesota Lighting Efficiency program.

Sample Variables

The following sample variables will be used throughout the survey for skip patterns and fills.

[PROGRAM] Program name

- 1 Lighting Efficiency Program
- 2 Small Business Lighting Program
- 3 Business LED Instant Rebate Program

[DATE] Date of participation

[YEAR] Year of participation

[ASSISTANCE] Type of assistance received through program

- 1 Free direct-install services
- 2 Instant discounts
- 4 Rebates

[QUANTITY] Number of **[MEASURE]** rebated (If greater than one)

[EE_MEAS] Prioritized high efficiency measure category implemented (for use inside net-to-gross sections) (examples listed below)

- 1 Aerators
- 2 Aerators and LED lamps
- 3 Compact fluorescent lamps
- 4 Energy efficient lighting (custom projects)
- 5 Energy efficient fluorescent lamps
- 6 LED lamps
- 7 Occupancy sensors

[DI] Indicator of whether received direct install measures installed

- 0 Did not receive direct install measure
- 1 Received direct install measure



[DI_ONLY] Indicator for whether EE_MEAS is a direct install measure (for use inside net-to-gross sections)

- 0 EE_MEAS is not a direct install measure
- 1 EE_MEAS is a direct install measure

[REBATE_AMT] The dollar amount of rebate

[REBATE] Indicator for whether received downstream rebate

- 0 Did NOT receive rebate
- 1 Received rebate

[KWH_SAVINGS] The amount of kilowatt savings

[ADDRESS] Address where project was implemented

[STATE] Program state

- 1 Colorado
- 2 Minnesota

[CONTACT_NAME] Contact listed in participant files

[PRESCRIPTIVE] Indicator for whether received a prescriptive rebate

- 0 Did NOT receive a prescriptive rebate
- 1 Received a prescriptive rebate

[CUSTOM] Indicator for whether received a custom rebate

- 0 Did NOT receive a custom rebate
- 1 Received a custom rebate

[DISTRIBUTOR] Distributor name listed in Midstream LED participant files

[POST-DISCOUNT TOTAL LED COST] Final cost of all LEDs purchased

[PRE-DISCOUNT TOTAL LED COST] Full cost of all LEDs purchased

[TOTAL LED DISCOUNT] Total LED cost discount

[CASEID] Case's unique identification code

[MULTIFLAG] Flag indicating that case is part of a multiple

[MULTID] Multiple's identification code



[STRATA] Indicator which program was participated in

- 1 Prescriptive LED
- 2 Prescriptive Fluorescent
- 3 Prescriptive Sensor
- 4 Custom
- 5 Prescriptive CFL
- 6 Instant Rebate
- 7 Direct Install

Introduction

INT01

Hello, my name is **[INTERVIEWER NAME]**, and I'm calling on behalf of Xcel Energy regarding your firm's (IF PROGRAM<>3 SHOW: "participation in their") (IF PROGRAM=3 SHOW "purchase of L-E-D bulbs through the" **[PROGRAM]**).

May I speak with **[CONTACT NAME]** or the person who decided to (IF PROGRAM<>3 SHOW: "participate in") (IF PROGRAM=3 SHOW "purchase L-E-D bulbs through"] Xcel Energy's program?

- 1 Yes
- 2 No, R not knowledgeable [SKIP TO C2]

MULTCHK

[ASK IF MULTFLAG=1] [INTERVIEWER QUESTION: Is this the first case of a multiple?]

- 1 Yes; first case [SKIP TO C1]
- 2 No; subsequent case [SKIP TO NPS1]

PREAMBLE

I'm with Tetra Tech, an independent research firm. I am calling to learn about your experiences with the **[EE_MEAS]** you recently [IF DI=1 SHOW "received" ELSE SHOW "purchased"] through Xcel Energy's **[PROGRAM]**. You may have already received an email or letter from Xcel Energy explaining the purpose of this study.

I'm not selling anything; I'd just like to ask your opinion about this program. Let me assure you that your responses will be kept confidential and your individual responses will not be revealed to anyone unless you grant permission.

Before we start, I would like to inform you that for quality control purposes, this call will be recorded and monitored and that this call will take approximately 20 to 25 minutes of your time.

- 1 Continue [SKIP TO C1]



FAQ [READ AS NEEDED]

(Who is doing this study: Xcel Energy has hired our firm to evaluate the program. As part of the evaluation, we're talking with customers that participated in the program to understand their experiences and satisfaction with the program.)

(Why are you conducting this study: Studies like this help Xcel Energy better understand customers' need for, and interest in, energy efficiency programs and services.)

(Timing: This survey should take approximately 20 minutes of your time. Is this a good time for us to speak with you? IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070.)

(Sales concern: I am not selling anything; we would simply like to learn about your experience with the program. Your responses will be kept confidential and not revealed to anyone unless you grant permission. If you would like to talk with someone from Xcel Energy about this study, feel free to call Nick Minderman at (612) 330-6362)

Identification of Decision-Maker (Downstream only)

[IF PROGRAM = 3 SKIP TO NEXT SECTION]

C1 Our records indicate that you received **[ASSISTANCE]** for installing **[EE_MEAS]** through the **[PROGRAM]** around **[DATE]** for your location at **[ADDRESS]**.

Is this correct?

- 1 Yes (SKIP TO C5)
- 2 Recalls participation, but some information is incorrect [SPECIFY WHAT IS INCORRECT] (SKIP TO C5)
- 3 Does not recall participation
- 88 Don't know
- 99 Refused

C2 [IF PROGRAM = 3 SKIP TO CL2] Is there someone else at your firm who would be more knowledgeable about your organizations' participation in Xcel Energy's **[PROGRAM]**?

- 1 Yes (SKIP TO C4)
- 2 No
- 88 Don't know
- 99 Refused (TERMINATE)



C3 Through Xcel Energy's **[PROGRAM]**, your organization received **[ASSISTANCE]** for installing **[EE_MEAS]**.

Are you sure you don't recall this? (RECORD ONE NUMBER)

- 1 I don't remember (RECORD ANY COMMENTS, TERMINATE)
- 2 I remember (READ, "GREAT, THEN LET'S CONTINUE", SKIP TO MULTCHK)
- 3 There is somebody else who knows about our participation
- 88 Don't know (TERMINATE 81)
- 99 Refused (TERMINATE 91)

C4 May I please speak with that person? (RECORD ONE NUMBER)

- 1 Yes (BEGIN THE SURVEY AGAIN WITH THIS NEW RESPONDENT SKIP TO INT01)
- 2 Yes, R is not currently available (RECORD NAME AND SET UP CALLBACK)
- 3 No (TERMINATE 91)
- 88 Don't know (TERMINATE 81)
- 99 Refused (TERMINATE 91)

C5 Are you the person most knowledgeable about your organization's decision to implement the **[EE_MEAS]** through Xcel Energy's **[PROGRAM]**?

- 1 Yes (SKIP TO C7)
- 2 No
- 88 Don't know

C6 May I speak with the person most knowledgeable about your organization's decision to implement the **[EE_MEAS]** through Xcel Energy's **[PROGRAM]**?

- 1 Yes, R is available (BEGIN THE SURVEY AGAIN WITH THIS NEW RESPONDENT SKIP TO INT01)
- 2 Yes, R is not currently available (RECORD NAME AND SET UP CALLBACK)
- 3 No (TERMINATE 91)
- 88 Don't know (TERMINATE 81)
- 99 Refused (TERMINATE 91)



C7 Besides yourself, who else was involved in the decision to implement the [EE_MEAS] through Xcel Energy's [PROGRAM]?
(DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 Business owner
- 2 Property owner or manager
- 3 Facility manager
- 4 Financial or accounting staff
- 5 Energy manager
- 6 Corporate management
- 7 Contractor
- 8 Distributor or vendor
- 9 Manufacturer
- 10 Consultant
- 11 Other (SPECIFY)
- 12 Nobody else
- 88 Don't know
- 99 Refused

Identification of Decision-Maker (Midstream LED Only)

[IF PROGRAM <> 3 SKIP TO NEXT SECTION]

CL1 Our records indicate that your organization purchased LEDs from [DISTRIBUTOR] around [DATE]. Do you recall this purchase?

- 1 Yes (SKIP TO CL5)
- 2 No
- 88 Don't know
- 99 Refused

CL2 Is there someone else at your firm who may be familiar with this LED purchase?

- 1 Yes
- 2 No (TERMINATE 81)
- 88 Don't know (TERMINATE 81)
- 99 Refused (TERMINATE 91)

CL4 May I please speak with that person? (RECORD ONE NUMBER)

- 1 Yes (BEGIN THE SURVEY AGAIN WITH THIS NEW RESPONDENT SKIP TO INT01)
- 2 Yes, R is not currently available (RECORD NAME AND SET UP CALLBACK)
- 3 No (TERMINATE91)
- 88 Don't know (TERMINATE81)
- 99 Refused (TERMINATE91)



CL5 Are you the person most knowledgeable about your organization's decision to purchased LEDs from **[DISTRIBUTOR]**?

- 1 Yes (SKIP TO CL7)
- 2 No
- 88 Don't know

CL6 May I speak with the person most knowledgeable about your organization's decision to purchased LEDs from **[DISTRIBUTOR]**?

- 1 Yes, R is available (BEGIN THE SURVEY AGAIN WITH THIS NEW RESPONDENT SKIP TO INT01)
- 2 Yes, R is not currently available (RECORD NAME AND SET UP CALLBACK)
- 3 No (TERMINATE 91)
- 88 Don't know (TERMINATE 81)
- 99 Refused (TERMINATE 91)

CL7 Besides yourself, who else was involved in the decision to purchase LEDs from **[DISTRIBUTOR]** around **[DATE]**.? (DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 Business owner
- 2 Property owner or manager
- 3 Facility manager
- 4 Financial or accounting staff
- 5 Energy manager
- 6 Corporate management
- 7 Contractor
- 8 Distributor or vendor
- 9 Manufacturer
- 10 Consultant
- 11 Other (SPECIFY)
- 12 Nobody else
- 88 Don't know
- 99 Refused

CL10 Prior to this phone call, were you aware that Xcel Energy discounted the cost of the LEDs purchased from **[DISTRIBUTOR]**?

- 1 Yes
- 2 No (TERMINATE 82)
- 88 Don't know (TERMINATE 82)
- 99 Refused (TERMINATE 82)



CL11 Did you learn about the discount available from Xcel Energy for purchasing LEDs BEFORE or AFTER you made the final decision to purchase the LEDs?

- 1 Before
- 2 After
- 3 At the same time
- 88 Don't know
- 99 Refused

CL12 By receiving the discount on your LED purchase, you participated in Xcel Energy's Business LED Instant Rebate Program. I will use this program name throughout the remainder of the survey.

- 1 Continue

Net Promoter Information

[IF MULTCHK=2 SKIP TO I1]

NPS1 Great now, on a scale from 0 to 10, where 0 means "Not at all likely" and 10 means "Extremely likely", how likely are you to recommend Xcel Energy to a friend, relative, or colleague?

- ___ Record likelihood [0-10]
- 88 Don't know
- 99 Refused

NPS2 What is the primary reason for your rating?

[RECORD RESPONSE VERBATIM]

Installation Verification (All)

[SKIP TO I5 IF DI_ONLY=1]

I1 Are all of the [EE_MEAS] still installed and operational at your facility at [ADDRESS]?

- 1 Yes
- 2 No, none are installed (SKIP TO I2)
- 3 Some are installed, some not installed
- 88 Don't know (SKIP TO PA1)
- 99 Refused (SKIP TO PA1)



I1b About when were [IF I1=3 SHOW “most of”] the **[EE_MEAS]** installed at **[ADDRESS]**?
[READ LIST]

- 1 Less than 3 months ago
- 2 3 months to less than 6 months ago
- 3 Half a year to less than 1 year ago
- 4 1 year to less than 1.5 years ago
- 5 1.5 years to less than 2 years ago
- 6 2 or more years ago
- 88 Don't know
- 99 Refused

I1c [ASK IF I1=3] How many units are NOT installed?

[RECORD NUMERIC VALUE]

I2 (ASK IF I1 = 2 OR 3 ELSE SKIP TO I5) Was the uninstalled **[EE_MEAS]** ever installed?

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

I4 (ASK IF I1 = 2 OR 3) Why aren't they currently operating at **[ADDRESS]**? (DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 Equipment didn't work properly
- 2 Equipment failed/broke
- 3 Unhappy with performance (SPECIFY)
- 4 Installed at other location (SPECIFY ADDRESS)
- 5 Change in production schedule
- 6 Eliminated production line permanently
- 7 Eliminated production line temporarily
- 8 Too busy / haven't gotten to it yet
- 9 Other projects took priority
- 10 Other (SPECIFY)
- 88 Don't know
- 99 Refused



I3 (ASK IF I1 = 2 OR 3) Do you plan on installing **[EE_MEAS]** at **[ADDRESS]**?

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

I3a (ASK IF I3=1) When do you plan to get it operational? [READ LIST]

- 1 In less than 3 months
- 2 3 months to less than 6 months
- 3 Half a year to less than 1 year
- 4 1 year to less than 1.5 years
- 5 1.5 years to less than 2 years
- 6 2 or more years
- 88 Don't know
- 99 Refused

I5 [SKIP TO PA1 IF DI_ONLY<>1]

Are all of the free **[EE_MEAS]** installed during the lighting assessment still installed and operational at your facility at **[ADDRESS]**?

- 1 Yes
- 2 No, none are installed
- 3 Some are installed, some not installed
- 88 Don't know
- 99 Refused

I5c [ASK IF I5=3] How many units are NOT installed?

[RECORD NUMERIC VALUE]

I6 Were you planning to install the **[EE_MEAS]** on your own before you learned about the Small Business Lighting program?

- 1 Yes
- 2 No [SKIP TO PA1]
- 88 Don't know [SKIP TO PA1]
- 99 Refused [SKIP TO PA1]



I7 Would you have purchased and installed any of the **[EE_MEAS]** on your own had it not been installed for free through the program?

- 1 Yes
- 2 No [SKIP TO PA1]
- 88 Don't know [SKIP TO PA1]
- 99 Refused [SKIP TO PA1]

I8 Would you have installed similar types of **[EE_MEAS]** or different products?

- 1 Similar
- 2 Different
- 88 Don't know
- 99 Refused

I8b [ASK IF I8=2] How would the products be different?

[RECORD RESPONSE VERBATIM]

I9 Would you have installed more, the same, or fewer than the products installed by the program?

- 1 More
- 2 Same
- 3 Fewer
- 88 Don't know
- 99 Refused

I10 [ASK IF I9 = 3] About how many products would you have installed?

- Record number of products [1-80]
- 88 Don't know
- 99 Refused

I11 Would you have installed the products at about the same time as the program or sometime afterwards?

- 1 Same time
- 2 Afterwards
- 88 Don't know
- 99 Refused



I12 [IF I11=2] About how many months later?

- 1 In less than 3 months
- 2 3 months to less than 6 months
- 3 Half a year to less than 1 year
- 4 1 year to less than 1.5 years
- 5 1.5 years to less than 2 years
- 6 2 or more years
- 88 Don't know
- 99 Refused

Source of Program Information (All)
--

[IF MULTCHK=2 SKIP TO MEASCHK]

PA1 How did you learn about the **[ASSISTANCE]** available through Xcel Energy's **[PROGRAM]**? (DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 Through my Xcel Energy account manager
- 2 Through a representative at the Xcel Energy Business Solutions Center (BSC)
- 3 Another Xcel Energy staff member
- 4 Mailing from Xcel Energy (i.e., bill inserts, direct mailings)
- 5 From an equipment vendor or contractor
- 6 From a colleague or coworker at my company
- 7 Previous experience with an Xcel Energy program
- 8 Xcel Energy event
- 9 Xcel Energy website
- 10 Another online resource (not Xcel Energy's website)
- 11 Mass advertising campaign
- 12 Article in a newspaper, magazine, or newsletter
- 13 Email
- 14 Text message
- 15 Through this telephone call
- 16 CLEAResult
- 17 Other (SPECIFY)
- 88 Don't know
- 99 Refused



PA2 (IF PA1 = 11) What type of advertising campaign?
(DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 A radio ad
- 2 A television ad
- 3 A newspaper ad
- 4 Billboards
- 5 Print ads
- 6 Electronic or internet
- 7 Other (SPECIFY)
- 88 Don't know
- 99 Refused

PA3 How would you prefer to receive information about assistance available through Xcel Energy's energy efficiency programs in the future? (DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 Through my account manager
- 2 Through a representative at the Xcel Energy Business Solutions Center
- 3 Another Xcel Energy staff member
- 4 Information from Xcel Energy in general (i.e., bill inserts, direct mailings)
- 5 From an equipment vendor or contractor
- 6 From a colleague or coworker at my company
- 7 Previous experience with an Xcel Energy program
- 8 Xcel Energy event
- 9 Xcel Energy website
- 10 Another online resource (not Xcel Energy's website)
- 11 A mass advertising campaign
- 12 Article in a newspaper, magazine, or newsletter
- 13 Email
- 14 Text message
- 15 Other (SPECIFY)
- 88 Don't know
- 99 Refused

PA4 (IF PA1 <> 7) Prior to participating in the **[PROGRAM]** in **[YEAR]**, had you previously participated in any Xcel Energy's energy efficiency programs?

- 1 Yes (SPECIFY: Which programs?)
- 2 No
- 88 Don't know
- 99 Refused



PA11 (ASK IF STATE = 2 MN) Another program available to smaller business customers is the Onestop Efficiency Shop program operated by the Center for Energy and the Environment, which offers rebates for lighting equipment as a complement to Xcel Energy's programs. Before this call, had you heard of this program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

PA12 (IF PA11 = 1) Has your organization ever participated in the Onestop Shop program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

PA13 (IF PA12 = 1) About when did your organization **last** participate in the Onestop Shop program? (RECORD ONE NUMBER)

- 1 Less than 3 months ago
- 2 3 months to less than 6 months ago
- 3 Half a year to less than 1 year ago
- 4 1 year to less than 1.5 years ago
- 5 1.5 years to less than 2 years ago
- 6 2 or more years ago
- 88 Don't know
- 99 Refused

Free-ridership

MeasCHK [ASK IF MULTCHK = 2 ELSE SKIP TO N1]
[INTERVIEWER QUESTION: Is this case's [EE_MEAS] variable the same as a previous case's [EE_Meas] variable?]

- 1 Yes; Duplicate measure
- 2 No, New measure [SKIP TO NINTRO]



DecisionCHK [ASK IF MeasCHK=1 ELSE SKIP]

Now, thinking about the [EE_MEAS] project at [ADDRESS] in [CITY], was the decision-making process the same or different from the previous [EE_MEAS] project we discussed?

- 1 Same decision-making process
[SPECIFY RecordNumber of which case you're duplicating]
[SKIP TO Customer Profile, FIRM_INT]
- 2 Different decision-making process
[ASK FREERIDERSHIP, SKIP TO NINTRO]

Free-ridership (Downstream Rebate Only)

[IF PROGRAM = 3 OR DI_ONLY = 1 SKIP TO NEXT SECTION (SKIP TO M1)]

NINTRO For the next series of questions, I would like to focus on the [EE_MEAS] you purchased through the program.

- 1 Continue

N1 Why did you decide to purchase the [EE_MEAS]? [SELECT ALL THAT APPLY. DO NOT READ LIST. PROBE WITH "Were there any other reasons?"]

- 1 The program incentive or rebate
- 2 The program-provided technical assistance
- 3 The program-subsidized energy assessment or study
- 4 Recommendation of third party contractor/distributor/engineer
- 5 Recommendation of Xcel Energy staff
- 6 Recommendation of internal staff
- 7 Assistance provided through Xcel Energy/program vendor staff
- 8 Wanted to save energy
- 9 Wanted to reduce costs
- 10 Past experience with any Xcel Energy program (SPECIFY PROGRAM)
- 11 Funding from an outside source (SPECIFY SOURCE & AMOUNT)
- 12 Something else (SPECIFY)
- 13 Needed to upgrade equipment / outdated equipment
- 88 Don't know
- 99 Refused



N2 Did you learn about the assistance available from Xcel Energy for purchasing **[EE_MEAS]** rebated through the program BEFORE or AFTER you made the final decision to purchase the **[EE_MEAS]** you did?

- 1 Before
- 2 After
- 3 At the same time
- 88 Don't know
- 99 Refused

N2a Did you receive a feasibility study, energy audit, facility assessment, or technical assistance from Xcel Energy that recommended this **[EE_MEAS]**?

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

N3INT The **[PROGRAM]** provided **[ASSISTANCE]** to help purchase the **[EE_MEAS]** project.

With that in mind, I'm going to ask you to rate the importance of factors that might have influenced your decision to purchase the **[EE_MEAS]**. Using a 0 to 10 scale, where 0 means not at all important and 10 means very important, please rate the importance of each of the following in your decision to purchase the **[EE_MEAS]** over **standard efficiency equipment** at that time.

If any of the factors mentioned are not applicable to your experience, just say "not applicable".

[READ LIST; LIST ROTATES]

For N3b through N3m

- ___ Record importance (0-10)
- 77 Not applicable
- 88 Don't know
- 99 Refused



- N3B** Availability of the program rebate or financial incentive
N3C [IF N2a = 1] Information provided through an Xcel Energy study, audit, or other technical assistance
N3D Recommendation from a contractor, vendor, or supplier [IF > 5, COLLECT NAME AND CONTACT INFORMATION OF VENDOR AND INTERVIEW VENDOR AT END OF SURVEY)
N3E [IF PA1 = 7 OR PA4 = 1] Previous experience with any Xcel Energy program
N3F Information from an Xcel Energy training course, seminar, or Expo
N3G Information from the program or utility marketing materials
N3H Standard practice or corporate policy in your business regarding equipment installation prior to participating in the program
N3I Payback on investment before any Xcel Energy rebates
N3J General concerns about the environment, global climate change, and/or energy independence
N3K Financial assistance or rebate from another organization that is not Xcel Energy
N3L Information or recommendations provided to you by any Xcel Energy staff

N3M_ASK Is there anything else that influenced your decision to purchase the **[EE_MEAS]** that I haven't mentioned?

- 1 Yes (SPECIFY)
- 2 No

N3M [ASK IF N3M_ASK = 1] Using a 0 to 10 scale, where 0 means not at all important and 10 means very important, how important was...
The other factor(s) you mentioned

N4INT Now I'd like to ask you about the importance of the **[PROGRAM]** to your decision.

I'd like you to rate the "overall importance of the program keep in mind the program can include rebates, energy audits, technical assistance, and informative marketing materials VERSUS "the overall importance of **[show highest rated of N3h, N3i, N3j, or N3k; in the case of a tie, show "factors outside of the program"]**" in your decision to purchase the **[EE_MEAS]** over standard efficiency equipment so that the two scores add up to 10.

[IF NEEDED: If the Xcel Energy Program was more important, it should receive a higher score. If the factors outside of the program were more important, it should receive a higher score, if the program and factors outside of the program were of equal importance, the scores should be the same. The two scores must add up to 10]

N4_PSC ____ rating of the importance of the **[PROGRAM]**

N4_OSC ____ rating of the importance of most important other factor



N5 Now I would like you to think about the action you would have taken if the **[PROGRAM]** had not been available.

Using a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely, how likely is it that you would have purchased the **[EE_MEAS]** over standard efficiency equipment if the **[PROGRAM]** had not been available?

___ Record likelihood (0-10)
0 [SKIP TO P1]
88 Don't know [SKIP TO P1]
99 Refused [SKIP TO P1]

N6 You just said that there was a **[N5 RESPONSE]** in 10 likelihood that you would have purchased the **[EE_MEAS]** over standard efficiency equipment if the **[PROGRAM]** had not been available.

How many months LATER do you think you would have purchased the **[EE_MEAS]**?

[INTERVIEWER NOTE: PLEASE ENTER IN MONTHS]

___ Number of months later
666 Earlier
777 Never
888 Don't know
999 Refused

Partial Free-ridership (Downstream Rebate Only)

[IF PROGRAM = 3 OR DI_ONLY = 1 SKIP TO NEXT SECTION]

P1 Supposing that you had not participated in the **[PROGRAM]** or received information and expertise about purchasing the **[EE_MEAS]** from Xcel Energy or your trade partner, which of the following alternatives would you have been MOST likely to do?
[READ LIST, OPTIONS 1-6 ARE RANDOMIZED]

- 1 Installed fewer **[EE_MEAS]**
- 2 Installed standard efficiency equipment or whatever is required by code
- 3 Installed equipment more efficient than code, but less efficient than what was installed through the program
- 4 Repaired, refurbished, tune-uped, or recommissioned the existing equipment
- 5 Done nothing, or kept the existing equipment as is
- 6 Installed the exact same equipment



- 7 Or done something else (SPECIFY)
- 88 Don't know
- 99 Refused

P2 (IF P1=1) Of the units you installed through the program, what percent would you have installed or purchased if the program had not been available?

[RECORD PERCENTAGE OF UNITS ACTUALLY INSTALLED]

[IF NEEDED: "For example, would you have installed about one-fourth (25%), one-half (50%), three fourths (75%) of what you installed through the program."]

____ Percentage of units would have installed (0-100)

- 888 Don't know
- 999 Refused

P3 (IF P1=3) Can you tell me what model or efficiency level you were considering as an alternative?

(INTERVIEWER NOTE: IT IS OK TO TAKE AN ANSWER SUCH AS "10% more efficient than code", "10% less efficient than the program equipment", "standard efficiency equipment", or "I would not have installed a VFD".)

(RECORD RESPONSE VERBATIM)

Free-ridership Consistency Checks (Downstream Rebate Only)

[IF PROGRAM = 3 OR DI_ONLY = 1 SKIP TO NEXT SECTION]

T1 How influential was the **[PROGRAM]**, including all of the information and technical assistance you received in planning the design and installation of the **[EE_MEAS]** we have been discussing? Would you say the program had:
[READ LIST]

- 1 *No influence* on your plans
- 2 *A little influence* on your plans
- 3 *A moderate influence* on your plans
- 4 *A significant influence* on your plans
- 88 Don't know
- 99 Refused



T2 [ASK IF REBATE = 1] Was the program rebate or financial assistance included as part of your capital spending proposal to get the project approved?

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

T3 In your own words, please describe what impact, if any, all the assistance you received through the program had on your decision to purchase the **[EE_MEAS]** project at the time you did?

(RECORD RESPONSE VERBATIM)

Free-riders (Midstream LED Only)

[IF PROGRAM <> 3 SKIP TO NEXT SECTION]

M1 Why did your organization decide to purchase the LEDs? *[SELECT ALL THAT APPLY. DO NOT READ LIST. PROBE WITH "Were there any other reasons?"]*

- 1 The program discount
- 2 The program-provided technical assistance
- 3 The program-subsidized energy assessment or study
- 4 Recommendation of third party contractor/distributor/engineer
- 5 Recommendation of Xcel Energy staff
- 6 Recommendation of internal staff
- 7 Assistance provided through Xcel Energy/program vendor staff
- 8 Wanted to save energy
- 9 Wanted to reduce costs
- 10 Past experience with any Xcel Energy program (SPECIFY PROGRAM)
- 11 Funding from an outside source (SPECIFY SOURCE & AMOUNT)
- 12 Something else (SPECIFY)
- 88 Don't know
- 99 Refused



M3INT According to our records, the final price paid for the LEDs purchased by your organization was about \$[POST-DISCOUNT TOTAL LED COST]. However, the full price before the Xcel Energy discount was about \$[PRE-DISCOUNT TOTAL LED COST]. Therefore the total discount provided by Xcel Energy was about \$[TOTAL LED DISCOUNT].

With that in mind, I'm going to ask you to rate the importance of factors that might have influenced your decision to purchase the LEDs. Using a 0 to 10 scale, where 0 means not at all important and 10 means very important, please rate the importance of each of the following in your decision to purchase the LEDs **over regular lightbulbs** at that time.

If any of the factors mentioned are not applicable to your experience, just say "not applicable".

[READ LIST; LIST ROTATES]

For M3b through M3m

___ (0-10)
77 Not applicable
88 Don't know
99 Refused

- M3B** Availability of the program discount
- M3C** Information provided through an Xcel Energy study, audit, or other technical assistance
- M3D** Recommendation from a contractor, vendor, or supplier
- M3E** [IF PA1 = 7 OR PA4 = 1] Previous experience with any Xcel Energy program
- M3F** Information from an Xcel Energy training course, seminar, or Expo
- M3G** Information from the program or utility marketing materials
- M3H** Standard practice or corporate policy in your business regarding equipment purchases prior to participating in the program
- M3I** Payback on investment before any Xcel Energy discounts
- M3J** General concerns about the environment, global climate change, and/or energy independence
- M3K** Financial assistance or rebate from another organization that is not Xcel Energy
- M3L** Information or recommendations provided to you by any Xcel Energy staff



M3M_ASK Is there anything else that influenced your decision to purchase the **[EE_MEAS]** that I haven't mentioned?

- 1 Yes (SPECIFY)
- 2 No

M3M [ASK IF M3M_ASK = 1] Using a 0 to 10 scale, where 0 means not at all important and 10 means very important, how important was...
The other factor(s) you mentioned

M4INT Now I'd like to ask you about the importance of the discount in your decision.

I'd like you to rate the "overall importance of the discount" VERSUS "the overall importance of **[show highest rated of M3h, M3i, M3j, or M3k; in the case of a tie, show "factors outside of the program"]**" in your decision to purchase the LEDs over regular lightbulbs so that the two scores add up to 10.

[IF NEEDED: If the Xcel Energy Program was more important, it should receive a higher score. If the factors outside of the program were more important, it should receive a higher score, if the program and factors outside of the program were of equal importance, the scores should be the same. The two scores must add up to 10]

N4_PSC ____ rating of the importance of the **[PROGRAM]**

N4_OSC ____ rating of the importance of most important other factor

M5 Now I would like you to think about the action you would have taken if the \$[TOTAL LED DISCOUNT] discount had not been available.

Using a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely, how likely is it that you would have purchased the LEDs over regular lightbulbs if the discount had not been available?

____ Record likelihood (0-10)

- | | | |
|----|------------|---------------|
| 0 | | [SKIP TO MP1] |
| 88 | Don't know | [SKIP TO MP1] |
| 99 | Refused | [SKIP TO MP1] |



M6 You just said that there was a **[M5 RESPONSE]** in 10 likelihood that you would have purchased the LEDs over regular lightbulbs if the Xcel Energy discount had not been available.

How many months LATER do you think you would have purchased the LEDs?

[INTERVIEWER NOTE: PLEASE ENTER IN MONTHS]

____ Number of months later
666 Earlier
777 Never
888 Don't know
999 Refused

Partial Free-ridership (Midstream LED Only)

[IF PROGRAM <> 3 SKIP TO NEXT SECTION]

MP1 Supposing that you had not received the \$[TOTAL LED DISCOUNT] discount from Xcel Energy, which of the following alternatives would you have been MOST likely to do?

[READ LIST, OPTIONS 1-5 ARE RANDOMIZED]

- 1 Purchased fewer LEDs
- 2 Purchased regular lightbulbs
- 3 Purchased bulbs more efficient than standard, but less efficient than LEDs
- 4 Done nothing, or kept the existing equipment as is
- 5 Purchased the exact same amount of LEDs
- 6 Or done something else (SPECIFY)
- 88 Don't know
- 99 Refused

MP2 (IF MP1=1) Of the LEDs you purchased through the program, what percent would you have purchased if the discount had not been available?

[RECORD PERCENTAGE OF UNITS ACTUALLY INSTALLED]

[IF NEEDED: "For example, would you have installed about one-fourth (25%), one-half (50%), three fourths (75%) of what you installed through the program."]

____ Percentage of units would have installed
88 Don't know
99 Refused



MP3 (IF MP1=3) Can you tell me what type of bulb you were considering as an alternative?
(INTERVIEWER NOTE: IT IS OK TO TAKE AN ANSWER SUCH AS “CFLs”, “halogens”, “incandescents”, or “regular bulbs”.)

(RECORD RESPONSE VERBATIM)

MP4 In your own words, please describe what impact, if any, the discount had on your decision to purchase the LEDs at the time you did?

(RECORD RESPONSE VERBATIM)

Like Spillover (All)

[IF MEASCHK=1 SKIP TO SA1]

S1 Since participating in the **[PROGRAM]**, have you installed or implemented any of the same **[EE_MEAS]** on your own **without** the financial assistance of an Xcel Energy program at this facility or at other locations served by Xcel Energy in **[STATE]**?
[IF YES: "Were these implemented at this facility, at another facility, or both?"]

- 1 Yes, only at this facility
- 2 Yes, only at another facility
- 3 Yes, at both this and another facility
- 4 No
- 88 Don't know (SKIP TO SA1)
- 99 Refused (SKIP TO SA1)

S1a What equipment was installed?

[RECORD RESPONSE VERBATIM]

S2a Thinking of the **[EE_MEAS]** that you installed on your own, was this more, less, or the same amount of **[EE_MEAS]** as what you installed through the program?

- 1 More
- 2 Less
- 3 Same amount (SKIP TO S3)
- 88 Don't know (SKIP TO S3)



S2a_M (ASK IF S2a = 1) Compared to the amount of **[EE_MEAS]** that you installed through the program at **[ADDRESS]**, how much **[EE_MEAS]** did you install on your own?

We're looking for a percent compared to the amount installed through the program. For example, if it was about twice as much as what you installed through the program you would say 200%.

[INTERVIEWER NOTE: An answer of 100% here would be S2a=3, same amount.]

____ Enter percentage [101-800%]

888 Don't know

(SKIP TO S3)

999 Refused

(SKIP TO S3)

S2a_L (ASK IF S2a = 2) Compared to the amount of **[EE_MEAS]** that you installed through the program at **[ADDRESS]**, how much **[EE_MEAS]** did you install on your own?

We're looking for a percent compared to the amount installed through the program. For example, if it was about half as much as what you installed through the program you would say 50%.

[INTERVIEWER NOTE: An answer of 100% here would be S2a=3, same amount.]

____ Enter percentage [1-99%]

888 Don't know

(SKIP TO S3)

999 REFUSED

(SKIP TO S3)

S2b So, just to confirm, the amount of additional energy efficient equipment you bought on your own without an Xcel Energy rebate was **[S2a_M OR S2a_L]** of what you got through the program?

1 Yes, that's correct

2 No, that's incorrect (SKIP BACK TO CORRECT S2a_M or S2a_L)

S3 I'm going to read a statement about the energy efficient improvements that you purchased or implemented on your own. On a scale from 0-10, with 0 indicating that you strongly disagree, and 10 indicating that you strongly agree, please rate your level of agreement with the following statement:

My past experience with Xcel Energy's programs influenced my decision to implement this/these improvement(s) on my own.

____ Record agreement (0-10)

88 Don't know

99 Refused

S4 Why did you implement this energy efficiency improvement without going through an Xcel Energy program? [DO NOT READ; INDICATE ALL THAT APPLY]

- 1 Application process too burdensome / Too much paperwork
- 2 The preapproval process takes too long / Couldn't wait for preapproval
- 3 Takes too long to receive the rebate / Couldn't wait for rebate
- 4 No time to participate, needed equipment immediately
- 5 The project would not qualify
- 6 The rebate amount wasn't large enough
- 7 Did not know program was available for this equipment
- 8 Outside of Xcel Energy territory
- 9 Other (SPECIFY)
- 88 Don't know
- 99 Refused

S4_5_oth [ASK IF S4=5] Why would the equipment not qualify?

[RECORD RESPONSE VERBATIM]

Participant Experience and Program Satisfaction (Downstream only)
--

[IF MULTCHK=2 TO NEXT SECTION (SKIP TO SM7_INT)]

[IF PROGRAM = 3 SKIP TO NEXT SECTION (SKIP TO SM7_INT)]

SA1 Next I'd like to ask you some questions about your experiences when participating in the **[PROGRAM]**.

Who completed the program application? (DO NOT READ, INDICATE ALL THAT APPLY)

- 1 Xcel Energy account manager
- 2 Xcel Energy Business Solutions Center representative
- 3 Other Xcel Energy program staff
- 4 The equipment vendor / distributor / contractor
- 5 Respondent
- 6 Someone else at your company (SPECIFY ROLE/DEPARTMENT)
- 7 CLEAResult
- 8 Other (SPECIFY)
- 77 Not yet complete
- 88 Don't know
- 99 Refused



SA2 (ASK IF SA1 = 5 or 6) Did you require any assistance from Xcel Energy staff, [IF STATE = 1 CO say "CLEAResult staff,"] or an equipment vendor to complete the program application?

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

SA3 (ASK IF SA2 = 1) What did you require assistance with? (DO NOT READ)

- 1 Determine if equipment qualified for program
- 2 Determine rebate amount
- 3 Efficiency level
- 4 General specifications
- 5 Business type classification
- 6 Other (SPECIFY)
- 88 Don't know
- 99 Refused

SA3a [ASK IF STATE = 1 CO ELSE SKIP TO SA4]
[IF SA1=7 SHOW "In addition to the application,"] What type of assistance did CLEAResult provide to you during this project? Did CLEAResult ...
(READ LIST, INDICATE ALL THAT APPLY)

- 1 Conduct a free lighting assessment of your facility
- 2 Provide a follow-up assessment report with recommendations
- 3 Help evaluate the financial feasibility of the project
- 4 Facilitate the selection of an installation contractor
- 5 Assist you in participating in the program
- 6 Provide any other type of assistance? (SPECIFY)
- 7 [DO NOT READ] None of these [SKIP TO SA4]

SA3b Next, I'd like you to tell me how satisfied you are with the following CLEAResult assistance you received on a 0 to 10 scale with 0 being "very dissatisfied" and 10 being "very satisfied". How satisfied are you with ...?

- SA3B_A** [ASK IF SA3a=1] The free lighting assessment
- SA3B_B** [ASK IF SA3a=2] The lighting assessment report with recommendations
- SA3B_C** [ASK IF SA3a=3] The evaluation of financial feasibility
- SA3B_D** [ASK IF SA3a=4] The selection of an installation contractor
- SA3B_E** [ASK IF SA3a=5] The assistance with program participation
- SA3B_F** [ASK IF SA3a=6] **[SA3a=6 specify response]**



SA4 What hurdles did you face, if any, when deciding whether or not to implement the **[EE_MEAS]** through the program? (DO NOT READ; INDICATE ALL THAT APPLY)

- 1 No barriers/hurdles [SKIP TO SA6]
- 2 Other priorities for capital spending
- 3 Lack of funds available for investment
- 4 Lack of financing
- 5 Economy
- 6 Amount of management time to oversee projects
- 7 Incremental cost for more efficient equipment higher than we expected
- 8 Payback period too long
- 9 Business hesitant to replace existing working equipment
- 10 Upper management doesn't see the benefit of energy efficient equipment
- 11 Unsure of energy savings potential
- 12 We lease the space
- 13 Contractors weren't familiar with program
- 14 Internal staff lacked expertise about measures
- 15 Rebate application process was challenging
- 16 Amount of time needed by vendor to install equipment
- 17 Internal approval lead time
- 18 Equipment availability
- 19 Other (SPECIFY)
- 88 Don't know [SKIP TO SA6]
- 99 Refused [SKIP TO SA6]

SA4_8_oth [ASK IF SA4=8] What are your payback requirements for projects be approved?

[RECORD RESPONSE VERBATIM]

SA5 How did the **[PROGRAM]** help you overcome these hurdles?

(RECORD VERBATIM)



SA6 What benefits has your company realized, if any, as a result of your participation in the **[PROGRAM]**? (DO NOT READ, INDICATE ALL THAT APPLY)

- 1 Increased profits
- 2 Environmental protection
- 3 Staff engagement
- 4 Positive public relations
- 5 Better equipment performance
- 6 Long-term strategic energy management plan
- 7 Better understanding of energy efficiency
- 8 Reduced energy costs
- 9 Other (SPECIFY)
- 10 No benefits
- 88 Don't know
- 99 Refused

SA7 Next, I'd like you to tell me how satisfied you are with specific aspects of the **[PROGRAM]** on a 0 to 10 scale with 0 being "very dissatisfied" and 10 being "very satisfied". (ROTATE LIST)

For SA7a through SA7p

- ___ Record satisfaction (0-10)
- 77 Not applicable
- 88 Don't know
- 99 Refused

- SA7a** The type of equipment or improvements eligible for the program
- SA7b** The requirements for equipment eligibility
- SA7c** The clarity of the program's terms and conditions
- SA7d** [ASK IF PRESCRIPTIVE = 1] The clarity of the products eligible for the program
- SA7f** [ASK IF DI = 1] The type of products installed by the program at no charge during the assessment
- SA7g** [ASK IF DI = 1] The performance of the products installed by the program at no charge during the assessment
- SA7i** [ASK IF REBATE = 1] The amount of the equipment rebate
- SA7j** The program application process
- SA7l** The program's handling of your questions or concerns
- SA7m** [ASK IF CUSTOM = 1] The amount of time it took to receive preapproval for the project
- SA7n** [ASK IF REBATE = 1] The amount of time it took to receive the rebate
- SA7o** The contractor who installed or implemented the energy efficient equipment
- SA7p** The amount of energy savings you've seen since the project completed



SA8 (ASK FOR EACH RATED < 5 IN SA7) You mentioned having a satisfaction of **[SA7 ranking]** out of 10 with “**[SA7 category]**”. Why do you say that?

For SA8a through SA8p
(RECORD RESPONSE VERBATIM)

- SA8a** The type of equipment or improvements eligible for the program
- SA8b** The requirements for equipment eligibility
- SA8c** The clarity of the program’s terms and conditions
- SA8d** [ASK IF PRESCRIPTIVE = 1] The clarity of the products eligible for the program
- SA8f** [ASK IF DI = 1] The type of products installed by the program at no charge during the assessment
- SA8g** [ASK IF DI = 1] The performance of the products installed by the program at no charge during the assessment
- SA8i** [ASK IF REBATE = 1] The amount of the equipment rebate
- SA8j** The program application process
- SA8l** The program’s handling of your questions or concerns
- SA8m** [ASK IF CUSTOM = 1] The amount of time it took to receive preapproval for the project
- SA8n** [ASK IF REBATE = 1] The amount of time it took to receive the rebate
- SA8o** The contractor who installed or implemented the energy efficient improvements
- SA8p** The amount of energy savings you’ve seen since the project completed

SA9 Using a 0 to 10 scale, with 0 being “very dissatisfied” and 10 being “very satisfied”, how satisfied are you **overall** with the Xcel Energy **[PROGRAM]**?

___ Record satisfaction (0-10)
88 Don’t know
99 Refused

SA10 Why do you say that?

(RECORD RESPONSE VERBATIM)



SA11 Based on your experiences, which aspects of the **[PROGRAM]**, if any, would you change? (DO NOT READ LIST; INDICATE ALL THAT APPLY)

- 1 No change
- 2 Include additional types of equipment (SPECIFY: What types of equipment?)
- 3 Increase the rebate level (SPECIFY: to what?)
- 4 Speed up the rebate processing
- 5 Simplify the program application process or form (SPECIFY: How so?)
- 6 Require less information for project approval
- 7 Have completely web-based/online process
- 8 Give more detailed instructions or examples on application/form
- 9 Ensure that quoted rebate is the same as actual rebate
- 10 Speed up the preapproval of projects
- 11 Other (SPECIFY)
- 88 Don't know
- 99 Refused

SA12 Next, I would like you to think in terms of your satisfaction with Xcel Energy overall. On a 0 to 10 scale where 0 means very dissatisfied and 10 means very satisfied, how would you rate your satisfaction with Xcel Energy? (REPEAT SCALE IF NECESSARY)

[IF NEEDED: "The previous satisfaction question asked about your opinion of the program and here we are asking about Xcel Energy as your service provider."]

- ___ Record satisfaction (0-10)
- 88 Don't know
- 99 Refused

SA13 Has your experience with the **[PROGRAM]** increased, decreased, or not changed your overall satisfaction with Xcel Energy?

- 1 Increased
- 2 Decreased
- 3 Not changed
- 88 Don't know
- 99 Refused

Participant Experience and Program Satisfaction (Midstream LED only)

[IF MULTCHK=2 TO NEXT SECTION (SKIP TO FIRM_INT)]

[IF PROGRAM <> 3 SKIP TO NEXT SECTION]

SM7_INT Next I'd like to ask you some questions about your experiences purchasing discounted LEDs through the **[PROGRAM]**.
How satisfied are you with following aspects of the **[PROGRAM]** on a 0 to 10 scale with 0 being "very dissatisfied" and 10 being "very satisfied". (ROTATE LIST)

For SM7a through SM7e

- ___ Record satisfaction (0-10)
- 77 Not applicable
- 88 Don't know
- 99 Refused

- SM7a** The type of LEDs eligible for the discount
- SM7b** The amount of the LED price discount
- SM7d** The performance of the LED bulbs
- SM7e** The amount of energy savings you've seen since installing the LED bulbs

SM8 (ASK FOR EACH RATED < 5 IN SM7) You mentioned having a satisfaction of **[SM7 ranking]** out of 10 with "**[SM7 category]**". Why do you say that?

For SA8a through SA8p
(RECORD RESPONSE VERBATIM)

- SM8a** The type of LEDs eligible for the discount
- SM8b** The amount of the LED price discount
- SM8d** The performance of the LED bulbs
- SM8e** The amount of energy savings you've seen since installing the LED bulbs

SM9 Using a 0 to 10 scale, with 0 being "very dissatisfied" and 10 being "very satisfied", how satisfied are you **overall** with the Xcel Energy **[PROGRAM]**?

- ___ Record satisfaction (0-10)
- 88 Don't know
- 99 Refused

SM10 Why do you say that?

(RECORD RESPONSE VERBATIM)

SM11 Based on your experiences, which aspects of the **[PROGRAM]**, if any, would you change? (DO NOT READ LIST; INDICATE ALL THAT APPLY)

- 1 No change
- 2 Include additional types of LEDs (SPECIFY)
- 3 Increase the amount of the discount (SPECIFY: to what?)
- 4 Require less information
- 5 Other (SPECIFY)
- 88 Don't know
- 99 Refused

SM12 Next, I would like you to think in terms of your satisfaction with Xcel Energy overall. On a 0-to-10 scale where 0 means very dissatisfied and 10 means very satisfied, how would you rate your satisfaction with Xcel Energy? (REPEAT SCALE IF NECESSARY)

- ___ Record satisfaction (0-10)
- 88 Don't know
- 99 Refused

SM13 Has your experience with the **[PROGRAM]** increased, decreased, or not changed your overall satisfaction with Xcel Energy?

- 1 Increased
- 2 Decreased
- 3 Not changed
- 88 Don't know
- 99 Refused



Customer Profile (All)

IF MULTCHK=2 SKIP TO VEND]

FIRM_INT [IF MultFLAG=0 SHOW: “Finally,”] I’d like to ask you some questions about your business for classification purposes only.

- 1 Continue

FIRM1 Which of the following best describes your organization?
(READ LIST, SELECT ONE)

- 1 Local, state, or federal government institution
- 2 For-profit business
- 3 Non-profit business
- 4 Something else (SPECIFY)
- 88 Don’t know
- 99 Refused

FIRM2 What business activity accounts for most of the floor space covered by your Xcel Energy bill at **[ADDRESS]**? (DO NOT READ, ACCEPT ONE RESPONSE)

- 1 Office / Professional
- 2 Data center/computer server farm
- 3 Warehouse or distribution center.
- 4 Food sales or service
- 5 Retail
- 6 Education
- 7 Religious worship
- 8 Public assembly
- 9 Health care
- 10 Service
- 11 Lodging
- 12 Public order and safety
- 13 Industrial / Manufacturing
- 14 Agricultural
- 15 Vacant
- 16 Municipal / Governmental
- 17 Other (SPECIFY)
- 88 Don’t know
- 99 Refused



FIRM3 Do you own, rent, or lease the space you occupy at this location?

- 1 Own
- 2 Rent/lease
- 3 Own some and rent/lease some
- 4 Manage property
- 5 Other (SPECIFY)
- 88 Don't know
- 99 Refused

FIRM4 Is your facility at **[ADDRESS]** your company's only location, one of several in the region, or one of several across the nation?

- 1 Only location
- 2 One of several in region
- 3 One of several across the nation
- 88 Don't know
- 99 Refused

FIRM5 Approximately how many full-time and part-time employees are employed by your business at **[ADDRESS]**?

- 1 Less than 10
- 2 10 to less than 50
- 3 50 to less than 100
- 4 100 to less than 250
- 5 250 to less than 500
- 6 500 or more
- 88 Don't know
- 99 Refused

FIRM6 Does your company have any corporate policies related to energy efficiency standards that you need to consider when purchasing new equipment or making improvements to this facility?

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused



FIRM7 (ASK IF F6 = 1) Which of the following BEST describes this policy? (READ LIST)

- 1 Purchase energy efficient equipment regardless of cost
- 2 Purchase energy efficient equipment if it meets payback or return on investment criteria
- 3 Purchase standard efficiency equipment that meet code
- 4 Something else (SPECIFY)
- 88 Don't know
- 99 Refused

VEND (SKIP TO FIRM8 IF DecisionCHK=1)
(SKIP TO FIRM8 IF PROGRAM=3)
(ASK IF SAID VENDOR WAS INFLUENTIAL IN DECISION-MAKING PROCESS IN NET-TO-GROSS SECTION (N3D > 5))
Earlier you indicated that the recommendation from a contractor, vendor, or supplier influenced your decision to install **[EE_MEAS]**.

Could you give me the contact information of the vendor you worked through?

- 1 Yes
- 2 No [SKIP TO FIRM8]

VEND_BNAME Business name
VEND_CNAME Contact name
VEND_PHONE Phone number
VEND_ADDR Address

FIRM8 [IF MultCHK=2 SKIP TO COM] Would you please tell me your job title?

(RECORD VERBATIM)

FIRM9 May we have your permission to release your company's answers to Xcel Energy on an individual basis and possibly have a representative from Xcel Energy follow up with you to discuss issues that are of particular concern to you?

- 1 Yes
- 2 No



FIRM10 As part of our evaluation, we may need to follow-up on some of this information.
Would it be all right if someone from Tetra Tech called you if needed?

- 1 Yes
- 2 No
- 88 Don't know
- 99 Refused

COM [IF MultCHK=2 SHOW: "[INTERVIEWER, If R has more surveys to complete read:
Now I'd like to ask you a smaller selection of questions about another location we
have on record for your firm." OTHERWISE READ: "I'd like to thank you for your help
with this survey!
Do you have any comments you'd like us to share with Xcel Energy?

- 1 Yes (SPECIFY)
- 2 No
- 88 Don't know



APPENDIX C: PARTICIPANT CUSTOMER SURVEY RESPONSE RATE

Table C-1. CO Small Business Lighting Participant Customer Phone Survey Response Rate

Sample Disposition	Count
Starting Sample	615
Ineligible – nobody knowledgeable	57
Ineligible – recently surveyed	17
Ineligible – unusable	1
Refusal	103
Incompletes (partial surveys)	26
Language barrier	4
Bad number	11
Subsequent multiple case ¹	32
Attempted but not completed ²	224
Completed Surveys	140
Response Rate (Completed Surveys / Starting Sample)	22.8%

¹ For customers with multiple sampled premises, a primary case was chosen for contacts to avoid contacting individual customers multiple times.

² Average number of attempts: 5.6



APPENDIX D: NONPARTICIPANT CUSTOMER SURVEY INSTRUMENT

This structured questionnaire was used for computer-assisted telephone interviews (CATI) with nonparticipant customers for the 2016 evaluations of the following Minnesota and Colorado programs. One nonparticipant survey instrument was used for all programs. Program-specific questions are noted where applicable.

Minnesota	Colorado
MN Lighting Efficiency	CO Small Business Lighting
MN Computer Efficiency	CO Computer Efficiency
MN Efficiency Controls	

Sample variables

The following fills will be used throughout the survey. Some of these may need to be revised once we have had a chance to examine the nonparticipant database.

[PROGRAM] Program name

- 1 Efficiency Controls (MN)
- 2 Lighting Efficiency (MN)
- 3 Small Business Lighting (CO)
- 4 Computer Efficiency (MN and CO)

[MNEC_ELIGIBLE] Flag indicating whether customer is eligible for MN Efficiency Controls program

- 0 Ineligible
- 1 Eligible

[MNLGT_ELIGIBLE] Flag indicating whether customer is eligible for MN Lighting Efficiency program

- 0 Ineligible
- 1 Eligible

[COSBL_ELIGIBLE] Flag indicating whether customer is eligible for the CO Small Business Lighting program

- 0 Ineligible
- 1 Eligible

[ADDRESS] Facility address



[CONTACT NAME] Customer contact name (if available)

[BUSINESS NAME] Customer business name

[STATE] Customer State

- 1 MN
- 2 CO

[CLOSED] Flagged as a 2015 or 2016 closed loss (MN Lighting Efficiency only)

- 1 Customer flagged as closed loss
- 0 Customer NOT flagged as closed loss

[CLOSEDYEAR] Closed loss year; 2015 or 2016 (MN Lighting Efficiency only)

Introduction

Hello, my name is **[INTERVIEWER NAME]**, and I'm calling on behalf of Xcel Energy.

(IF CONTACT NAME AVAILABLE) May I speak with **[CONTACT NAME]**?

(IF NO CONTACT NAME) May I speak with the person most familiar with purchasing and maintaining the energy-using equipment for **[BUSINESS NAME]** at **[ADDRESS]**?

- 1 Yes
- 2 No [attempt to convert]

I'm with Tetra Tech, an independent research firm. We have been hired by Xcel Energy to talk with some of their customers about the types of energy using equipment they have at their company and about the programs that Xcel Energy is offering to their business customers.

I'm not selling anything; I'd just like to ask your opinions. Let me assure you that your responses will be kept confidential and your individual responses will not be revealed to anyone unless you grant permission.

Before we start, I would like to inform you that for quality control purposes, this call will be recorded and monitored.

(Who is doing this study: Xcel Energy has hired our firm to evaluate one of the energy efficiency business programs. As part of the evaluation, we're talking with customers that did and did not participate in the program to understand their awareness and experiences with the program.)

(Why are you conducting this study: Studies like this help Xcel Energy better understand customers' need for and interest in energy efficiency programs and services.)



(**Timing:** This survey should take about 20 minutes of your time. Is this a good time for us to speak with you? IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070.)

(**Sales concern:** I am not selling anything; we would simply like to learn about your experience with high efficiency equipment and energy efficiency programs. Your responses will be kept confidential. If you would like to speak with someone from Xcel Energy about the purpose of the study or its use, please contact Xcel Energy's Business Solutions Center at 1-800-481-4700 (Monday - Friday 8:00 AM - 5:00 PM)).

Identification of Decision-Maker

C1 (IF CLOSED = 1) Our records show that your organization considered implementing an energy efficient lighting project through Xcel Energy's Lighting Efficiency program in [CLOSEDYEAR] at [ADDRESS]. Is this correct?

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED

C2 (IF C1 <> 1) Is there anyone else at your firm who would be more knowledgeable about your organizations' involvement with the program? May I please speak with that person?

- 1 Yes (*SPECIFY NAME AND BEGIN THE SURVEY AGAIN WITH THIS NEW RESPONDENT*)
- 2 No
- D DON'T KNOW
- R REFUSED

C3 (IF CLOSED = 0 OR C1 <> 1) Are you the person who is most knowledgeable about the decision-making process for maintaining or purchasing new energy-using equipment at this location at [ADDRESS]?

(IF CLOSED = 1 AND C1 = 1) Are you the person who is most knowledgeable about your organization's involvement with this lighting project?

- 1 Yes (SKIP TO NPS1)
- 2 No (ASK C4)



C4 (IF CLOSED = 0 OR C1 <> 1) Who else at your firm would be more knowledgeable about your organizations' decision-making processes related to maintaining existing equipment or purchasing new energy using equipment at this location? May I please speak with that person?

(IF CLOSED = 1 AND C1 = 1) Who else at your firm would be more knowledgeable about your organization's involvement with this lighting project? May I please speak with that person?

- 1 Yes (*SPECIFY NAME AND BEGIN THE SURVEY AGAIN WITH THIS NEW RESPONDENT*)
- 2 No (*TERMINATE*)
- D DON'T KNOW (*TERMINATE*)
- R REFUSED (*TERMINATE*)

NPS1 On a scale from 0 to 10, where 0 means 'not at all likely' and 10 means 'extremely likely,' how likely are you to recommend Xcel Energy to a friend, relative or colleague? (Select one response)

- 0 Not at all likely
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 Extremely likely
- D Don't know

NPS2 What is the primary reason for your rating?

[OPEN ENDED RESPONSE]
98 No comment

Computer Use and Decisions

V1 Do you have an IT Department or staff within your organization that handles decisions related to computer equipment purchasing or computer power management?

- 1 Yes
- 2 No (*SKIP TO V3*)
- D DON'T KNOW (*SKIP TO V3*)
- R REFUSED (*SKIP TO V3*)



V2 Do you have local IT staff or are all IT staff located elsewhere?

- 1 Have local IT staff
- 2 IT staff is located elsewhere
- 3 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

V3 Are IT purchases made in large batches and rolled out to individual locations or are they made separately for each location?

- 1 Large batch purchasing for multiple locations
- 2 Purchased for individual locations separately
- 3 Only one location
- D DON'T KNOW
- R REFUSED

V4 Approximately how many computing devices, including desktop PCs, laptops, and tablets, are used by company staff at this location? Your best estimate is fine.

- ___ # of computing devices
- D DON'T KNOW
- R REFUSED

V5 Thinking of the computers used at your location, about what percent would you say are desktop computers and what percent are other devices such as laptops or tablets? (IF NEEDED: A best estimate is fine) (TOTAL MUST ADD TO 100%)

- ___% Desktops
- ___% Other devices such as laptops or tablets
- D DON'T KNOW
- R REFUSED



Program Awareness

PA1 (IF CLOSED = 0) Xcel Energy offers rebate and technical assistance programs to assist customers in making energy saving improvements in their facilities. Before today, were you aware Xcel Energy offers these types of programs?

(IF CLOSED = 1) Other than the Lighting Efficiency program, are you aware of any other rebate or technical assistance programs offered by Xcel Energy?

- 1 Yes
- 2 No (SKIP TO PA10)
- D DON'T KNOW (SKIP TO PA10)
- R REFUSED (SKIP TO PA10)

PA2 (IF PA1=1) What programs are you aware of? (DO NOT READ; SELECT ALL THAT APPLY)

- 1 Efficiency Controls (provides rebates to help business customers install automated control systems in their facilities)
- 2 Lighting Efficiency (provides rebates to help business customers upgrade lighting equipment in their facilities)
- 3 Small Business Lighting (provides rebates and technical assistance to help small business customers upgrade lighting equipment in their facilities)
- 4 Computer Efficiency (provides rebates to help business customers install high efficiency computing equipment and power management software)
- 5 Other program(s) (SPECIFY)
- D DON'T KNOW
- R REFUSED

PA3 (IF PA2<>4) One specific program Xcel Energy offers is called the Computer Efficiency program, which offers rebates to help business customers install high efficiency computing equipment and power management software. Before today, had you heard of this program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED



PA4 (IF PA2<>2 AND MNLGT_ELIGIBLE=1 AND (CLOSED=0 OR C1<>1)) Another one of Xcel Energy's programs is called the Lighting Efficiency program, which offers rebates to help business customers upgrade lighting equipment in their facilities. Before today, had you heard of this program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED

PA5 (IF PA2<>1 AND MNEC_ELIGIBLE=1) Another one of Xcel Energy's programs is called the Efficiency Controls program, which offers rebates to help business customers install building control systems in their facilities. Sometimes these are called Energy Management Systems or Building Automation Systems. Before today, had you heard of this program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED

PA6 (IF PA2<>3 AND COSBL_ELIGIBLE=1) Another one of Xcel Energy's programs is called the Small Business Lighting program, which offers rebates and technical assistance to help small business customers upgrade lighting equipment in their facilities. Before today, had you heard of this program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED



PA7 How did you learn about Xcel Energy's programs?

PROBE: Did you hear about the program from any other sources? (DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 Through my account manager
- 2 Through a representative at the Business Solutions Center (BSC)
- 3 Another Xcel Energy staff member
- 4 Mailing from Xcel Energy in general (i.e., bill inserts, direct mailings)
- 5 From an equipment vendor or contractor
- 6 From a colleague or coworker at my company
- 7 Previous experience with an Xcel Energy program
- 8 Xcel Energy event
- 9 Xcel Energy website
- 10 Another online resource (not Xcel Energy's website)
- 11 A mass advertising campaign
- 12 Saw an article in a newspaper, magazine, or newsletter
- 13 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

PA8 (IF PA7 = 11) What type of advertising campaign?
(DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 A radio ad
- 2 A television ad
- 3 A newspaper ad
- 4 Billboards
- 5 Print ads
- 6 Electronic or internet
- 7 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

PA9 You said that you received information from **[insert sources of information from PA7]**. Did this provide you with enough information to know how to participate in the program if you wanted to?

- 1 Yes
- 2 No (PROBE: What additional information would you have liked to receive?)
(SPECIFY)
- D DON'T KNOW
- R REFUSED



PA10 How would you prefer to receive information about assistance available through Xcel Energy's energy efficiency programs in the future? (DO NOT READ LIST, RECORD ALL THAT APPLY)

- 1 Through my account manager
- 2 Through a representative at the Business Solutions Center (BSC)
- 3 Another Xcel Energy staff member
- 4 Mailing from Xcel Energy in general (i.e., bill inserts, direct mailings)
- 5 From an equipment vendor or contractor
- 6 From a colleague or coworker at my company
- 7 Previous experience with an Xcel Energy program
- 8 Xcel Energy event
- 9 Xcel Energy website
- 10 Another online resource (not Xcel Energy's website)
- 11 A mass advertising campaign
- 12 Saw an article in a newspaper, magazine, or newsletter
- 13 E-mail
- 14 Text message
- 15 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

PA11 (IF STATE = MN) Another program available to smaller business customers is the Onestop Efficiency Shop program operated by the Center for Energy and the Environment, which offers rebates for lighting equipment as a complement to Xcel Energy's programs. Before this call, had you heard of this program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED

PA12 (IF PA11 = 1) Has your organization ever participated in the Onestop Shop program? (RECORD ONE NUMBER)

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED



Installations of Energy Efficient Equipment

EE1 Xcel Energy offer rebates for various equipment and services. For each of the following can you tell me if you have implemented or considered implementing these within the past two years? Have you implemented or considered implementing...(READ, ROTATE LIST)

- a. an automated control system that controls equipment such as HVAC and/or lighting (e.g., EMS, BAS)
- b. energy efficient lighting
- c. virtual desktop computers or PC power management software
- d. having an energy audit or assessment conducted

- 1 Have implemented within the past two years
- 2 Have considered but not yet implemented
- 3 No
- D DON'T KNOW
- R REFUSED

EE2 (ASK FOR ALL WHERE EE1=1) Did you implement this improvement through an Xcel Energy program or receive an Xcel Energy rebate?

- 1 Yes (SPECIFY: WHICH PROGRAM)
- 2 No
- D DON'T KNOW
- R REFUSED



EE3 What other actions other than the ones we just discussed, if any, has your business taken within the past two years in order to reduce its energy use? (DO NOT READ; INDICATE ALL THAT APPLY)

- 1 None
- 2 Installed high efficiency lighting equipment
- 3 Added lighting controls, occupancy sensors, and or time clocks
- 4 Installed high efficiency cooling equipment
- 5 Installed high efficiency heating equipment
- 6 Installed high efficiency ventilation equipment
- 7 Added controls to the heating, ventilation or air conditioning systems to reduce use
- 8 Building envelope improvements such as insulation, window film, etc.
- 9 Recommissioning or retrocommissioning
- 10 Process improvements (manufacturing processes)
- 11 Installed high efficiency motors or drives
- 12 Installed high efficiency refrigeration equipment
- 13 Tuned up existing equipment
- 14 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

EE4 (ASK FOR ALL MENTIONED IN EE3) Did you implement this improvement through an Xcel Energy program or receive an Xcel Energy rebate?

- 1 Yes (SPECIFY: WHICH PROGRAM)
- 2 No
- D DON'T KNOW
- R REFUSED

EE5 Using a scale of 0 to 10, with 0 being “not at all interested” and 10 being “very interested”, how interested will you be in participating in Xcel Energy’s energy efficiency rebate programs in the future?

- ____ (0-10)
- D DON'T KNOW
 - R REFUSED



EE6 (ASK IF EE5 < 7) What are the reasons why you wouldn't consider participating in the future? (DO NOT READ) (RECORD ALL THAT APPLY)

- 1 Application process seems too burdensome/Too much paperwork
- 2 Would take too long to get internal approval
- 3 No time to participate, would need equipment immediately
- 4 Rebate amounts aren't high enough
- 5 Program is unclear/difficult to understand
- 6 Concerns from existing vendor about participating in the program
- 7 Do not want or need upgraded equipment
- 8 Low prioritization of energy efficiency or conservation in firm
- 9 None
- 10 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

EE7 (ASK IF EE7<> 6) What additional information, assistance, or clarification would you need in order to participate in Xcel Energy's energy efficiency rebate programs?

(RECORD RESPONSE)

Decision-Making Processes

Next I'd like to ask some questions about decision-making at your business.

I1 If you were considering implementing or installing new energy efficient equipment to save energy or money at your company, where would you look to or who would you contact for information? (DO NOT READ, INDICATE ALL THAT APPLY)

- 1 Xcel Energy account manager
- 2 Xcel Energy Business Solutions Center representative
- 3 Other Xcel Energy program staff
- 4 Xcel Energy website
- 5 General Internet search (e.g., Google search)
- 6 Contractor/vendor
- 7 Xcel Energy-sponsored event
- 8 Internal management staff
- 9 Internal facilities management staff
- 10 Social Media (e.g., Linked-In, Facebook, Twitter)
- 11 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED



I2 On a scale of 0-10, with 0 being “not at all important” and 10 being “very important”, how important would each of the following be to your business when considering new equipment? (READ; ROTATE LIST)

- ___ Availability of a rebate
- ___ Recommendation of contractor or supplier
- ___ Compatibility with existing equipment
- ___ Initial purchase cost
- ___ Operating cost
- ___ Length of payback period (IF GT 5, What payback period do you strive for?)
- ___ Efficiency level of new equipment
- ___ Environmental concerns
- ___ Performance concerns
- ___ Capital investment or budget availability
- ___ Energy savings or reducing your energy bills
- ___ (READ LAST) some other consideration not already mentioned (SPECIFY)

I3 Does your company have any corporate policies related to energy efficiency standards or sustainability plans that you need to consider when purchasing new equipment or making improvements to this facility?

- 1 Yes
- 2 No
- D DON'T KNOW
- R REFUSED

I4 (IF I3 = 1) Which of the following best describes this policy? (READ LIST)

- 1 Purchase energy efficient equipment regardless of cost
- 2 Purchase energy efficient equipment if it meets payback or return on investment criteria
- 3 Purchase standard efficiency equipment that meet code
- 4 Something else (SPECIFY)
- D DON'T KNOW
- R REFUSED

I5 What are some of the major obstacles that your business faces when considering implementing energy efficiency improvements at your facility? (DO NOT READ; INDICATE ALL THAT APPLY)

- 1 Need to incorporate purchases or plans into longer term budget
- 2 Lack of capital budget
- 3 Time constraints of internal staff to implement
- 4 Lack of resources to implement
- 5 Approval by decision-makers
- 6 Uncertainty regarding return on investment
- 7 Contractors aren't familiar with measures
- 8 Lack of awareness of or knowledge about energy and money saving opportunities
- 9 Lack of awareness/knowledge about equipment characteristics or performance
- 10 Lack of knowledge about how to obtain assistance from Xcel Energy
- 11 Low prioritization of energy efficiency or conservation in firm
- 12 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

Satisfaction

SA1 (IF PA1 = 1) Next, I'd like you to tell me how satisfied you are with all of the Xcel Energy program offerings available to your business, using a 0-10 scale with 0 being "very dissatisfied" and 10 being "very satisfied". How satisfied are you with... (ROTATE LIST)

- a. ___ (0-10) The type of rebated equipment or improvements available through Xcel Energy's programs
- b. ___ (0-10) Requirements for project rebate eligibility
- c. ___ (0-10) The amount of the rebates offered for equipment or improvements
- d. ___ (0-10) The information you have received from Xcel Energy about their programs
- e. ___ (0-10) The level of technical support and information available to you, including technical assessments and studies?

SA2 (FOR EACH RATED < 5 IN SA1) Why do you say that?
(RECORD VERBATIM)



SA3 Thinking about Xcel Energy overall as your provider, using a 0-to-10 scale where 0 means “very dissatisfied” and 10 means “very satisfied”, how would you rate your satisfaction with Xcel Energy?

_____ (0-10)

D DON'T KNOW

R REFUSED

Customer Profile

F1INTRO Finally, I'd like to ask you some questions about your business for classification purposes only.

F1 Which of the following best describes your organization? (READ LIST, SELECT ONE)

1 Local, state, or federal government institution

2 For-profit business

3 Non-profit business

4 Something else (SPECIFY)

D DON'T KNOW

R REFUSED

F2 What business activity accounts for most of the floor space covered by your Xcel Energy bill at **[ADDRESS]**? (DO NOT READ, ACCEPT ONE RESPONSE)

1 Office/professional

2 Data center/computer server farm

3 Warehouse or distribution center

4 Food sales or service

5 Retail

6 Education

7 Religious worship

8 Public assembly

9 Health care

10 Service

11 Lodging

12 Public order and safety

13 Industrial/Manufacturing

14 Agricultural

15 Vacant

16 Municipal/Governmental

17 Other (SPECIFY)

D DON'T KNOW

R REFUSED



F3 Do you own or lease the space you occupy at this location?

- 1 Own
- 2 Rent/lease
- 3 Own some and rent/lease some
- 4 Manage property
- 5 Other (SPECIFY)
- D DON'T KNOW
- R REFUSED

F4 Is your facility at **[ADDRESS]** your company's only location, one of several in the region, or one of several across the nation?

- 1 Only location
- 2 One of several in region
- 3 One of several across the nation
- D DON'T KNOW
- R REFUSED

F5 Approximately how many full-time and part-time employees are employed by your business at **[ADDRESS]**?

- 1 Less than 10
- 2 10-49
- 3 50-99
- 4 100-249
- 5 250-499
- 6 500 or more
- D DON'T KNOW
- R REFUSED

F6 (IF MNEC_ELIGIBLE=1 AND EE1a<>1) Does your facility have a centralized building automation or energy management system that controls energy-using equipment such as HVAC or lighting?

- 1 Yes
- 2 No
- D DON'T KNOW



F7 (IF EE1a=1 OR F6=1) [IF EE1a=1 SHOW: "Earlier you mentioned that you recently installed an automated controls system in your facility."] What types of equipment is controlled by your automated control system? (READ, SELECT ALL THAT APPLY)

- 1 Heating
- 2 Cooling
- 3 Ventilation
- 4 Lighting
- 5 Other (SPECIFY)
- D DON'T KNOW

F7a Are these controls integrated into a building automation or energy management system?

- 1 Yes
- 2 No
- D DON'T KNOW

F8 Can we have your permission to release your company's answers to Xcel Energy on an individual basis and possibly have a representative from Xcel Energy follow up with you to discuss issues that are of particular concern to you?

- 1 Yes
- 2 No

COM I'd like to thank you for your help with this survey! Do you have any comments you'd like us to share with Xcel Energy?

- 1 Yes (SPECIFY)
- 2 No



APPENDIX E: NONPARTICIPANT CUSTOMER SURVEY RESPONSE RATE

Table E-1. CO Small Business Lighting Nonparticipant Customer Phone Survey Response Rate

Sample Disposition	Count
Starting Sample	214
Ineligible – nobody knowledgeable	10
Refusal	38
Incompletes (partial surveys)	16
Language barrier	5
Bad number	23
Attempted but not completed ¹	88
Completed Surveys	34
Response Rate (Completed Surveys / Starting Sample)	15.9%

¹ Average number of attempts: 4.3



APPENDIX F: TRADE PARTNER INTERVIEW GUIDE

The following topic guide was used for semi-structured interviews with participating distributors and contractors to support the 2016 evaluations of the Minnesota Lighting Efficiency program and Colorado Small Business Lighting program.

This guide served to offer consistent direction to ensure certain topics are covered, but evaluators were permitted to follow the flow of the interview and modify questions as needed to fit the interviewee's circumstance. As a result, not all questions were asked of all interviewees and interviews may have explored other topics specific to each program.

Company Profile

- 1) What is your primary role(s) in the supply and delivery of lighting to the commercial and industrial customer market? (Examples include manufacturer, manufacturer representative, wholesale distributor, engineering firm, contractor, energy services/management firm, etc.)
- 2) How many employees do you have in your company?
- 3) Could you please tell me specifically the types of equipment or services you sell/specify for commercial and industrial customers? (Probe for the specific types and efficiency levels as applicable.)

Program Awareness and Involvement

- 1) Could you describe for me your participation or involvement in the [Small Business Lighting program or Lighting Efficiency program or Business LED Instant Rebate program]? (*Probe for level of activity – including number of projects*)
- 2) When did you first get involved with the program(s)? Why did you decide to participate/get involved in the program?
- 3) What do you see as the value of the program(s) for you? What do you see as the value of the program for your customers?
- 4) Is it usually clear whether to direct a project towards the custom, prescriptive, or LED instant rebate tracks? How do you decide which track to pursue? How could Xcel Energy help simplify this decision for you?
- 5) How well would you say you understand, or how familiar are you with Xcel Energy's [Small Business Lighting program or Lighting Efficiency program or Business LED Instant Rebate program]? Are there any aspects of the program(s) that are unclear to you? (*Probe: preapproval process, documentation requirements, completed project process*)
- 6) Who do you typically interact with from the program(s) (*Probe for: Xcel Energy sales reps, engineering, marketing, Ecova, CLEAResult, Center for Energy & Environment*)? How

often and for what purposes? How would you describe your interactions with each of these program staff?

- 7) Do you feel there are adequate program communications? Are any changes needed? What are the key message points you need to know about the program(s)?
- 8) Do you read the Xcel Energy quarterly electronic Energy Exchange newsletter? What information do you find useful? [If the respondent does not receive the newsletter, ask if they would like to]
- 9) What additional support could the program(s) offer that you would find beneficial? Are there any additional tools that the program(s) should offer?
- 10) Have you participated in any trainings sponsored by the Xcel energy program(s)? What topics did the training cover? Was it beneficial? Why or why not?
- 11) Would you see value in program sponsored trainings? What topics would be of most interest? What format would you prefer for the training (*in-person small group, in-person large group, online webinar, etc.*)?
- 12) What are your impressions of the overall program(s) design? Do you think it serves the customers well? Do you think it serves the equipment/service vendors well?
- 13) Are there other opportunities to promote energy-efficient lighting products to business customers that the program(s) are not currently addressing? Should the program(s) include other types of lighting equipment that currently are not eligible? What types of equipment?
- 14) [MN Lighting Efficiency Only] Does CEE's One-Stop Shop program offer any advantages over the Xcel Energy programs? What advantages? In what situations would you direct a project to One-stop Shop rather than to an Xcel Energy program? Why?

Customer Interactions

- 1) How do you leverage the [Small Business Lighting program or Lighting Efficiency program or Business LED Instant Rebate program] for your business, if at all?
- 2) Do you actively promote/introduce the program(s) with your customers? If yes, how? What do you tell customers?
- 3) What is the level of customer awareness of the availability of the [Colorado Small Business Lighting program or Minnesota Lighting Efficiency program or Business LED Instant Rebate program]? Has customer program awareness increased or decreased in the past 12 months? Why do you think this is?
- 4) Who (title/position), within the customer's organization, do you need to work with in order to get interest and close the sale? What information do you need to provide for them (other than cost, timeframe, and equipment descriptions)?

- 5) What are the primary reasons customers typically want to install program-qualifying lighting?
- 6) What factors most influence customer project decision-making? Ask of mentioned factors: which are the one or two most important in influencing customers' decisions? (*Probe for differences among customer segments - size, industry, etc.*).
- 7) In order of importance, what are the primary concerns/questions customers ask you about a project they are trying to address (e.g., cost, timeline, warranty, vendor financing, financial savings, energy savings)?
- 8) What do you see as the primary barriers to implementing energy efficient lighting equipment? Do these reasons vary across different customer segments?

Program Procedures (Downstream Only)

- 1) Have you been involved in assisting customers with their applications for prescriptive projects, custom projects, or both?
- 2) On a scale of 1 to 5 where 1 is 'very difficult' and 5 is 'not at all difficult', how would you rate the difficulty of completing Xcel's program applications for prescriptive projects? How about custom projects? Why do you give this/these ratings?
- 3) [PRESCRIPTIVE ONLY] What is working well about the *prescriptive* application process from your point of view? How would you like to see the *prescriptive* application process improved?
- 4) [CUSTOM ONLY] What is working well about the *custom* application process from your point of view? How would you like to see the *custom* application process improved?
- 5) Is it clear to you which products are eligible for the program? How about to your customers? Why or why not?
- 6) [CO SBL ONLY] Do you think the assistance that CLEAResult provides for projects is sufficient? Why or why not? Are there any opportunities for improvement?
- 7) [CO SBL ONLY] Have you reviewed any lighting audit reports provide by CLEAResult? Do you think the recommendations were reasonable? Why or why not? Are there any opportunities for improvement?
- 8) [MN Lighting Efficiency Only] Are you familiar with the prescriptive program changes that were implemented in early 2016 in order to simplify the application process?
- 9) Do you think these changes were effective in simplifying participation? Why or why not?
- 10) What else could be done to further improve the prescriptive application process?



- 11) [CUSTOM ONLY] How has the preapproval process for custom projects worked from your perspective?
- 12) What have the primary challenges been?
- 13) Has the time required to receive preapproval been reasonable?
- 14) Were you kept up-to-date regarding the status of your applications during the preapproval review period?
- 15) How could the custom preapproval process be improved?
- 16) [CUSTOM ONLY] Have you been involved in any custom projects that receive preapproval but then the customer subsequently does not apply for program rebates? What are the main reasons why? What, if anything, could the program do to encourage these projects to participate?
- 17) [MN CUSTOM ONLY] Has your company earned any trade partner incentives for completing the custom project workbook? Do the incentives go directly to the employee who completes the application or are they shared among multiple employees?
- 18) Do you think the programs invoicing requirements are reasonable? Why or why not?
- 19) Do you feel the rebates offered through the program are adequate to encourage customers to implement program-qualifying lighting measures? How would you like to see the rebate structure revised, if at all? (*Probe for: rebate levels, offer \$/kWh rebate, prescriptive vs custom rebates, approval process, etc.*).
- 20) Have you ever offered a customer an internal discount similar in size to the Xcel Energy rebate in order to avoid participating in the program? Can you identify particular situations or types of customers where this may occur?

Program Procedures (LED Instate Rebate Only)

- 1) What is working well about the Xcel Energy LED instant rebate program from your point of view? How would you like to see the program improved?
- 2) Is it clear to you which ENERGY STAR® qualified LED bulbs are eligible for the instant rebate program? How about to your customers? Why or why not?
- 3) Do you think the instant rebate program offers an incentive on a reasonable variety of LEDs? Why or why not? What LED products (bulbs or fixtures) would you like to see added?
- 4) Do you feel the discounts offered through the program are adequate to encourage customers to purchase program-qualifying LEDs? How would you like to see the discounts revised, if at all?



- 5) Does the process for determining whether a customer is served by Xcel Energy work well? Why or why not?
- 6) Do your invoices list the amount of the Xcel Energy discount received by the customer?
- 7) Your company has to front the cost of the LED discounts until receiving reimbursement from Xcel Energy. Does this requirement pose an issue for your company? How so?
- 8) What feedback have you heard from customers about the LED instant rebate program?

Business LED Instant Rebate NTG Questions (LED Instate Rebate Only)

According to program records, your company sold a total of [TOTAL COUNT = ____] ENERGY STAR® qualified LEDs that received an average discount of [REBATE = \$ ____] through Xcel Energy's Business LED Instant rebate program in 2015.

LED	Count of LEDs sold in 2015	Weighted Avg \$ discount per LED in 2015

NTG1. Now I'm going to ask you about the effect of the Xcel Energy program discounts on your sales of ENERGY STAR qualified LEDs. In 2015, the average discount was about [REBATE = \$ ____] per LED. If **no discounts or rebates** were available, do you think your company's sales of these LEDs would have been about the same, lower, or higher as the [COUNT = ____] that were sold in 2015?

1. About the same
2. Lower
3. Higher
97. Don't know
98. Refused

NTG2. [IF NTG1 = LOWER] By what percentage do you estimate your company's sales of the ENERGY STAR qualified LEDs would have been **lower** during 2015 if the Xcel Energy discount of [REBATE = \$ ____] per LED was **not** available?

RECORD PERCENTAGE = ____%

97. Don't know
98. Refused



NTG3. [IF NTG2 = DK OR REF] Can you try to estimate a percentage range? For example, 10% to 25% or 50% to 75%.

RECORD PERCENTAGE RANGE = _____%

- 97. Don't know
- 98. Refused

NTG4. [IF NTG1 = LOWER] I want to make sure I understand you correctly when you say your company's sales of ENERGY STAR qualified LEDs would be [NTG2 OR NTG3 % = ____] **lower** without the program discounts. So you're saying that if you sold 100 LEDs in a given week with the program discounts, you would have only sold [100 - (NTG2 OR NTG3 % x 100)] that week **without** the program discounts. Is this correct? [IF RESPONSE ≠ YES THEN CLARIFY RESPONSE TO NTG2 OR NTG3]

- 1. Yes
- 2. No
- 97. Don't know
- 98. Refused

NTG5a. Please explain why you think your sales of ENERGY STAR qualified LEDs would be [the same/lower/higher] in the absence of the Xcel Energy discount?

RECORD RESPONSE: _____

- 97. Don't know
- 98. Refused

NTG5b. Does the level of influence of the Xcel Energy discounts on sales differ by the type of LED?

- 1. Yes
- 2. No
- 97. Don't know
- 98. Refused

NTG5c. [IF NTG5b = Yes] Which types of LEDs sales are more or less influenced by the discounts?

NTG6. Do you sell other ENERGY STAR qualified LED products to Xcel Energy customers that are **not eligible** for an Xcel Energy discount or rebate?

- 1. Yes
- 2. No



- 97. Don't know
- 98. Refused

NTG7. [IF NTG6 = Yes] Using a scale from 0-10, with 0 indicating no influence and 10 indicating a very strong influence, how influential is Xcel Energy's LED Instant Rebate program on your sales of ENERGY STAR qualified LEDs that are NOT eligible for program discounts?

RECORD RESPONSE: _____

- 97. Don't know
- 98. Refused

NTG8. [IF NTG7 > 0] Compared to the quantity of ENERGY STAR LEDs discounted through Xcel Energy's program, do you sell about the same, more or fewer ENERGY STAR LEDs that are NOT discounted through the program to Xcel Energy customers?

- 1. About the same
- 2. More
- 3. Fewer
- 97. Don't know
- 98. Refused

NTG9. [IF NTG8 = MORE OR FEWER] Compared to the quantity of discounted ENERGY STAR LEDs, about what percent [MORE OR LESS] do the undiscounted ENERGY STAR LED products represent for Xcel Energy customers, on average? [IF NTG8 = MORE THEN NTG9 SHOULD BE POSITIVE; IF NTG8 = LOWER THEN NTG9 SHOULD BE NEGATIVE]

RECORD PERCENTAGE = _____%

- 97. Don't know
- 98. Refused



NTG10. [IF NTG8 = MORE OR FEWER] I want to make sure I understand you correctly when you say sales of undiscounted ENERGY STAR LEDs to customers already receiving the discount is about [NTG9 % = ____] more/less than the quantity of discounted ENERGY STAR LEDs. So you're saying that if you sold 100 LEDs in a given week that received the program discount, you would also sell [100 +/- (NTG9 % x 100)] undiscounted ENERGY STAR LEDs to Xcel Energy customers. Is this correct? [IF RESPONSE ≠ YES THEN CLARIFY RESPONSE TO NTG9]

1. Yes
2. No
97. Don't know
98. Refused

Nonparticipant Spillover (Downstream Only)

- 1) Please think about all the program-eligible energy efficient lighting equipment you specified, sold and/or installed for Xcel Energy customers since January 1, 2015. Did you specify, sell, and/or install any of this program-eligible energy efficient lighting equipment to customers of Xcel Energy without the customer participating in an Xcel Energy program? (IF NO, SKIP TO NEXT SECTION)
- 2) Approximately what percent of all of this program-eligible energy efficient equipment that you specified, sold and/or installed for Xcel Energy customers since January 1, 2015 did not receive an incentive through an Xcel Energy program?
- 3) What are the main reasons why your firm did not request a customer incentive for this energy efficient lighting equipment you specified and/or installed?
- 4) I'm going to read you 3 statements. For each statement, please tell me whether you agree or disagree that this statement applies to your company. There are no right or wrong answers; we just want your honest opinion.
 - a. Our past experience specifying or installing energy efficient lighting equipment through energy efficiency programs has convinced us that this equipment is cost effective or beneficial even without a program incentive. (Agree/Disagree)
 - b. We are better able to identify opportunities to use energy efficient lighting equipment and improve efficiency because of our previous experience with the performance of energy efficient lighting equipment installed through energy efficiency programs, and what we learned through working with Xcel Energy. (Agree/Disagree)
 - c. We are more likely to discuss energy efficient options with all of our customers when developing project plans because of our previous experience with the performance of energy efficient lighting equipment installed through energy efficiency programs, and what we learned through working with Xcel Energy. (Agree/Disagree)



- 5) Please describe what impact, if any, the [Small Business Lighting program or Lighting Efficiency program] had on your decision to specify or install energy efficient equipment outside of the program.

Market Transformation Indicators

- 1) How would you say Xcel Energy's program(s) affects your sales or installations of program-qualifying lighting equipment? Since your company first participated in the program(s), would you say that your sales/installations have increased: significantly, somewhat, a little, hardly at all?
- 2) Using a 0 to 100 percent scale, in what percent of total sales situations did you recommend high efficiency lighting equipment/services **before you learned about the program(s)**?
- 3) And using the same 0 to 100 percent scale, in what percent of total sales situations do you recommend high efficiency equipment/services **now that you have worked with the program(s)**?
- 4) What direction do you see the nonresidential lighting market taking in [Colorado or Minnesota] in the next 2 years? Do you see specific challenges for Xcel Energy or opportunities to promote efficient equipment or services? In particular, what opportunities do you see for lighting controls? Please describe.
- 5) Do you expect your sales or installations of program-qualified lighting equipment to increase, decrease or stay the same in the next 12 months? Why?
- 6) What role do you see the program(s) playing in the market for energy efficient lighting equipment and services going forward? In particular, how do you think the program could increase participation from lighting controls projects?
- 7) Do you promote energy efficient lighting equipment equally in areas with and without Xcel Energy incentives? Why or why not?
- 8) Have you participated in similar energy efficient business lighting programs offered by other utilities? Which utilities or programs? In comparison, what do you like or dislike about the Xcel Energy program(s)?

Wrap-Up

- 1) What do you think is working best in Xcel Energy's program(s)? *Ask separately for multiple programs.*
- 2) What do you think is most in need of improvement? *Ask separately for multiple programs.*



3) Overall, how satisfied are you with the program(s)? Would you say you are very satisfied, somewhat satisfied, neither satisfied or dissatisfied, somewhat dissatisfied, or very dissatisfied? *Ask separately for multiple programs.*

a. Why are you satisfied / How could your satisfaction be increased?

4) Is there anything else that you would like to share concerning the program(s)?



APPENDIX G: INFLUENTIAL VENDOR SURVEY INSTRUMENT

The following questionnaire was used for vendors whose recommendations were identified by participating customers as being influential in their decision to install program qualifying equipment.

Sample Variables

The following fills will be used throughout the survey. These fills are program and measure specific.

<PROGRAM> Program name

- 1 Lighting Efficiency Program
- 2 Small Business Lighting Program
- 3 Efficiency Controls Program
- 4 Computer Efficiency

[YEAR] Year of customer participation

[MEASTYPE] Generic product description (examples listed below)

- 1 Lighting equipment (IF PROGRAM = 1 OR 2)
- 2 Controls systems (IF PROGRAM = 3)
- 3 Computing equipment (IF PROGRAM = 4)

[EE_MEAS] Prioritized high efficiency measure category implemented (for use inside free-ridership section) (examples listed below)

- 1 Aerators
- 2 Aerators and led lamps
- 3 Compact fluorescent lamps
- 4 Energy efficient lighting (custom projects)
- 5 Energy efficient fluorescent lamps
- 6 LED lamps
- 7 Occupancy sensors
- 8 Efficient controls systems
- 9 Virtual desktops (program = 4)
- 10 PC power management software (PROGRAM = 4)

[CUST_ADDR] Address, city, state, and zip where measure implemented

[CONTACT] Vendor contact name



[CUST_NAME] Participant company name who identified vendor as being influential in decision-making process

[CASEID] Case's unique identification code

[MULTFLAG] Flag indicating that case is part of a multiple

[MULTID] Multiple's identification code

Introduction

INT01 Hello, my name is _____, and I'm calling on behalf of Xcel Energy regarding equipment your firm sold or services you provided that qualified for Xcel Energy's **<PROGRAM>**. May I speak with **<CONTACT>**?

[IF NO VENDOR CONTACT NAME] May I speak with the person who would be most knowledgeable about your firm's involvement with Xcel Energy's **<PROGRAM>**?

01 Yes

02 No, R not knowledgeable [SKIP TO OTHER_R]

MULTCHK **[ASK IF MULTFLAG=1]** **[INTERVIEWER QUESTION: Is this the first case of a multiple?]**

1 Yes; first case [SKIP TO PREAMBLE]

2 No; subsequent case [SKIP TO V1]

PREAMBLE I'm with Tetra Tech, an independent research firm. I am calling to learn about your experiences with the efficient equipment you sold or services you provided, where a rebate was issued to the customer through Xcel Energy's **<PROGRAM>**.

I'm not selling anything; I'd just like to ask your opinion about this program. I'd like to assure you that your responses will be kept confidential and your individual responses will not be revealed to anyone unless you grant permission.

Before we start, I would like to inform you that for quality control purposes, this call will be recorded and monitored.

01 Continue [SKIP TO C1]



FAQ

[READ AS NEEDED]

(Who is doing this study: Xcel Energy has hired our firm to evaluate the program. As part of the evaluation, we're talking with contractors that sold equipment through the program to understand their experiences with the program.)

(Why are you conducting this study: Studies like this help Xcel Energy better understand customers' need for and interest in energy efficiency programs and services.)

(Timing: This survey should take about 15 minutes of your time. Is this a good time for us to speak with you? IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070.)

(Sales concern: I am not selling anything; we would simply like to learn about your experience with the efficient equipment you sold through the program. Your responses will be kept confidential. If you would like to talk with someone from Xcel Energy about this study, feel free to call Nick Minderman at (612) 330-6362.)

Identification of Decision-Maker

C1 Our records indicate that you sold or installed **<EE_MEAS>** that qualified for a rebate through Xcel Energy's **<PROGRAM>** in **[YEAR]** to **<CUST_BUS_NAM>**. Is this correct?

- 01 Yes [SKIP TO C4]
- 02 Yes, we sold/installed **<EE_MEAS>** through the program, but some other information is incorrect (*SPECIFY WHAT IS INCORRECT*) [SKIP TO C4]
- 03 No, we did not sell **<EE_MEAS>** through the program [SKIP TO OTHER_R]
- 88 Don't know [SKIP TO OTHER_R]

OTHER_R Is it possible that someone else at your firm would be more knowledgeable about this sale or installation through the **<PROGRAM>**?

- 01 Yes
- 02 No (*TERMINATE 81*)
- 88 Don't know (*TERMINATE 81*)
- 99 Refused (*TERMINATE 91*)



AVAILABLE_R May I please speak with that person?

- 01 Yes (BEGIN THE SURVEY AGAIN WITH NEW R SKIP TO INT01)
- 02 Yes, but R is currently unavailable (SCHEDULE CALLBACK)
- 03 No (TERMINATE 91)
- 88 Don't know (TERMINATE 81)
- 99 Refused (TERMINATE 91)

C4 <CUST_BUS_NAM> indicated that you were influential in their decision to purchase this efficient equipment through the program. Now just to confirm, are you the person most knowledgeable about this customer's decision to purchase or install this <EE_MEAS> through the <PROGRAM>?

- 01 Yes
- 02 No (SKIP BACK TO OTHER_R)
- 88 Don't know (SKIP BACK TO OTHER_R)
- 99 Refused (TERMINATE 91)

C5 Was there anyone else at your company was involved with discussing options with this customer?

- 01 No one else
- 02 Yes (SPECIFY: Can I get their names?)
- 88 Don't know
- 99 Refused



Source of Program Awareness

[IF MULTCHK=2 SKIP TO V1]

P1 How did you FIRST learn about the <PROGRAM>? (DO NOT READ LIST)

- 01 Print Advertising—newspaper, trade journal
- 02 Electronic or online ad – such as Google
- 03 Direct mail
- 04 Xcel Energy email newsletter (e.g., Energy Exchange newsletter)
- 05 Xcel Energy Website
- 06 Discussion with Xcel Energy account representative
- 07 Discussion with Xcel Energy program staff
- 08 Xcel Energy technical assistance study
- 09 Xcel Energy training/seminar
- 10 From another program; e.g., on-site assessment/audit program (SPECIFY)
- 11 Other utility information (SPECIFY)
- 12 Other Vendor
- 13 Trade partner from Xcel Energy
- 14 Manufacturer's rep
- 15 trade show
- 16 Contractors Association
- 17 Energy Efficiency Expo/Customer Fair
- 18 Other training seminar
- 19 Customer
- 20 Other (SPECIFY)
- 88 Don't know (SKIP TO V1)
- 99 Refused (SKIP TO V1)



P2 Did you hear about the program from any other sources? [SELECT ALL THAT APPLY]

- 01 Print Advertising—newspaper, trade journal
- 02 Electronic or online ad – such as Google
- 03 Direct mail
- 04 Xcel Energy email newsletter (e.g., Energy Exchange newsletter)
- 05 Xcel Energy Website
- 06 Discussion with Xcel Energy account representative
- 07 Discussion with Xcel Energy program staff
- 08 Xcel Energy technical assistance study
- 09 Xcel Energy training/seminar
- 10 From another program; e.g., on-site assessment/audit program (SPECIFY)
- 11 Other utility information (SPECIFY)
- 12 Other Vendor (SPECIFY)
- 13 Trade partner from Xcel Energy
- 14 Manufacturer's rep
- 15 Trade show
- 16 Contractors Association
- 17 Energy Efficiency Expo/Customer Fair
- 18 Other training seminar
- 19 Customer
- 20 Other (SPECIFY)
- 21 No other sources
- 88 Don't know
- 99 Refused

Free-ridership

V1 I'm going to ask you to rate the importance of the **<PROGRAM>** in influencing your decision to recommend this specific **<EE_MEAS>** to **<CUST_BUS_NAM>** at **[CUST_ADDR]**.

Using a 0 to 10 scale where 0 is 'Not at all important' and 10 is 'Very Important', how important was the **<PROGRAM>**, including incentives as well as program services, events, and information from Xcel Energy, in influencing your decision to recommend that **<CUST_BUS_NAM>** purchase or install this specific **<EE_MEAS>** at this time?

- _ (0-10)
- 88 Don't know
- 99 Refused



V2 And using a 0 to 10 likelihood scale, where 0 is “not at all likely” and 10 is “very likely,” what is the likelihood that you would have recommended this specific **<EE_MEAS>** to **<CUST_BUS_NAM>** if the **<PROGRAM>**, including incentives as well as program services, events, and information from Xcel Energy, had not been available?

_ (0-10)
88 Don't know
99 Refused

MeasCHK [ASK IF MULTCHK = 2]
[INTERVIEWER QUESTION: Is this case's **<EE_MEAS>** variable the same as a previous case's **<EE_MEAS>** variable?]

01 Yes, Duplicate measure	[SPECIFY RECORD # OF WHICH CASE
YOU'RE DUPLICATING]	[SKIP TO INT99]
02 No, New measure	[SKIP TO V3]

V3 Now, using a 0 to 100 percent scale, in what percent of [IF PROGRAM=1,2 "your lighting" ELSE "total design or"] sales situations do you recommend **<EE_MEAS>** before you learned about the **<PROGRAM>**?

_ (0-100)
888 Don't know
999 Refused

V4 And using the same 0 to 100 percent scale, in what percent of [IF PROGRAM = 1 or 2 SHOW your lighting ELSE total design or] sales situations do you recommend **<EE_MEAS>** now that you have worked with the **<PROGRAM>**?

_ (0-100)
88 Don't know
99 Refused



V5 Now, using a 0 to 10 scale where 0 is “Not at all important” and 10 is “Very important”, how important in your recommendations was . . . ?

- a. The technical support provided by Xcel Energy?
- b. The information provided by Xcel Energy representatives?
- c. The training seminars provided by Xcel Energy?
- d. The information provided by the Xcel Energy website?
- e. Your firm’s past participation in a rebate or audit program sponsored by Xcel Energy?
- f. The program incentive provided by Xcel Energy?

___ 0-10 Scale
 77 Not applicable
 88 Don't know
 99 Refused

V5_OTH In what other ways have your recommendations regarding <EE_MEAS> been influenced?

(RECORD VERBATIM)

Nonparticipant Spillover

MeasTypeCHK [ASK IF MULTCHK = 2]

[All multiples have uniform MEASTYPE. Therefore if SKIP TO INT99 IF MULTCHK=2]

[INTERVIEWER QUESTION: Is this case’s <MEASTYPE> variable the same as a previous case’s <MEASTYPE> variable?

01 Yes; Duplicate measure type [SPECIFY RECORD # OF WHICH CASE YOU'RE DUPLICATING]
 [SKIP TO INT99]

02 No; New measure type

VNP2 Please think about all the program-eligible <MEASTYPE> you specified, sold and/or installed for Xcel Energy customers since the beginning of 2015. Did you specify, sell, and/or install any of this program-eligible <MEASTYPE> to customers of Xcel Energy without the customer receiving an incentive through an Xcel Energy program?

01 Yes
 02 No (SKIP TO MT1)
 88 Don't know (SKIP TO MT1)
 99 Refused (SKIP TO MT1)



VNP3 Approximately what percent of all of this program-eligible **<MEASTYPE>** you specified, sold and/or installed for Xcel Energy customers did not receive an incentive through an Xcel Energy program?

____%

888 Don't know

999 Refused

VNP4 What are the main reasons why your firm did not request a customer incentive for this energy saving equipment you specified and/or installed?
(DO NOT READ—INDICATE ALL THAT APPLY; PROBE, WHAT ELSE?)

01 Not worth the paperwork for us to help the customer apply for the incentive

02 Not enough time or staff resources to complete the paperwork

03 Customer did not want the hassle of applying for the incentive

04 Takes too long for approval

05 Reached the maximum amount I could install through the program

06 The equipment would not qualify→ [Why not? (SPECIFY)]

07 Vendor does not participate in program

08 No time – needed equipment immediately

09 Thought the program ended

10 Didn't know the equipment qualified under another program

11 Just didn't think of it

12 Unable to get rebate (unsure why)

13 Other (SPECIFY)

88 Don't know

99 Refused

VNP5 I'm going to read you 3 statements. For each statement, please tell me whether you agree or disagree that this statement applies to your company. There are no right or wrong answers; we just want your honest opinion.

Our past experience specifying or installing energy efficient **<MEASTYPE>** through energy efficiency programs has convinced us that this equipment is cost effective or beneficial even without a program incentive.

01 Agree

02 Disagree

88 Don't know

99 Refused



VNP6 We are better able to identify opportunities to improve energy efficiency by using energy efficient **<MEASTYPE>** because of our previous experience installing energy efficient this equipment through energy efficiency programs and what we learned through working with Xcel Energy.

- 01 Agree
- 02 Disagree
- 88 Don't know
- 99 Refused

VNP7 We are more likely to discuss energy efficient options with all of our customers when developing project plans because of our previous experience installing energy efficient **<MEASTYPE>** through energy efficiency programs and what we learned through working with Xcel Energy.

- 01 Agree
- 02 Disagree
- 88 Don't know
- 99 Refused

VNP8 Please describe what impact, if any, the **<PROGRAM>** had on your decision to specify or install energy efficient **<MEASTYPE>** outside of the program.

(RECORD RESPONSE VERBATIM)

Market Transformation Indicators

[IF MULTCHK=2 SKIP TO INT99]

MT1 Prior to participating in the Xcel Energy program, in what percentage of your commercial projects did you specify, sell, or install program-qualifying **<MEASTYPE>**?

- ____ ENTER PERCENTAGE
- 888 Don't know
- 999 Refused

MT2 And since participating in the Xcel Energy program, in what percentage of your commercial projects did you specify, sell, and/or install program-qualifying **<MEASTYPE>**?

- ____ ENTER PERCENTAGE
- 888 Don't know
- 999 Refused



MT3 Do you also sell energy efficient **<MEASTYPE>** in areas where customers do not have access to Xcel Energy incentives?

- 01 Yes
- 02 No (SKIP TO MT7)
- 88 Don't know (SKIP TO MT7)
- 99 Refused (SKIP TO MT7)

MT4 Do you promote energy efficient **<MEASTYPE>** equally in areas with and without Xcel Energy incentives?

- 01 Yes
- 02 No
- 88 Don't know
- 99 Refused

MT5 About what percent of your sales of **<MEASTYPE>** are not in Xcel Energy's territory?

- _ (0-100)
- 88 Don't know
- 99 Refused

MT6 And approximately what percentage of your sales of **<MEASTYPE>** outside Xcel Energy's territory would qualify for incentives if they were sold in Xcel Energy's service territory?

- _ (0-100)
- 88 Don't know
- 99 Refused

MT7 Has the availability of energy efficient **<MEASTYPE>** to customers increased, decreased, or stayed about the same since you began selling the equipment through the **<PROGRAM>**?

- 01 Increased
- 02 Decrease
- 03 Stayed about the same
- 88 Don't know
- 99 Refused



MT8 In the next 2 years, do you expect the importance of **<PROGRAM>** to increase, decrease, or stay about the same in influencing your recommendations of energy efficient **<MEASTYPE>**?

- 01 Increase
- 02 Decrease
- 03 Stay about the same
- 88 Don't know
- 99 Refused

Vendor Characteristics

[IF MULTCHK=2 SKIP TO INT99]

A1 Just for classification purposes, approximately how many of the following work at this location?

- a. ___ Full-time
- b. ___ Part-time
- c. ___ Seasonal
- 8888 Don't know
- 9999 Refused

A2 Finally, I want to let you know that the information we have collected during this interview will be used in aggregate form to provide overall reports and conclusions. However, some of your individual responses could help Xcel Energy understand your particular circumstances. Can we have your permission to release your company's answers to Xcel Energy on an individual basis and possibly have a representative from Xcel Energy follow up with you to discuss issues that are of particular concern to you?

- 01 Yes
- 02 No

A3 As part of our evaluation we may need to follow-up on some of this information. Would it be alright if someone from Tetra Tech called you if needed?

- 01 Yes
- 02 No

INT99 [IF MultCHK=2 SHOW: "[INTERVIEWER, If R has more surveys to complete read: Now I'd like to ask you a smaller selection of questions about another location we



have on record for your firm.” OTHERWISE READ:] “Those are all the questions I have. I’d like to thank you for your help with this survey.”



APPENDIX H: BENCHMARKING INTERVIEW GUIDE

The following topic guide was used for semi-structured interviews with program managers of peer-utility programs including in the benchmarking research.

This guide served to offer consistent direction. However, interviews were tailored based on the specific program designs, secondary research findings, and the roles and responsibilities of each interviewee. As a result, not all questions were asked of all interviewees and interviews may have explored other topics not included in this guide.

Introduction

Hello, my name is _____ with Tetra Tech/NMR. We are working with Xcel Energy to compare its [PROGRAM] with other similar programs offered across the country in an effort to improve their energy efficiency program offerings to customers.

[Provide a brief description of Xcel Energy's program, the purpose of the benchmarking study, and the program/measures that we're interested in learning more about.]

[Offer to share a summary of study findings with the peer program manager as motivation to participate. If agreed upon, interviewee must provide requested information at the end of this interview guide to share study results.]

Before we begin, is it okay if I record our call?

Program Background

- 1) First, could you briefly describe your roles and responsibilities for the organization/program?
- 2) How long has the program been offered?
 - a) How long have you been involved with this program?
- 3) Is the program delivered internally or by a third-party implementer? (if 3rd party – who?)
- 4) What types of internal staff are used to administer the program? What are the roles of each of these types of staff?
- 5) How do *[Xcel Energy's measure offerings]* fit into your program portfolio? Are they handled as a stand-alone program or incorporated into other programs (such as custom) or delivery mechanisms?
- 6) Is the program offered year-round or only during specific months? If not year-round, for which months? Why not offered year-round?

Program Scope and Goals

- 1) What are your program's goals (spending, participation, energy savings, cost-effectiveness)?
 - a) How are your program goals set and by whom? Are they annual goals or multi-year goals? Are they a subset of some long range plan (integrated resource plan)?
 - b) Are goals set at the measure level, program level, segment (business, residential, low-income), or portfolio level? (Probe for each type of goal)
 - i. Participation goals
 - ii. Energy savings
 - iii. Cost-effectiveness
 - c) Are there goals or objectives for the program in addition to participation and savings goals (reaching specific segments, meeting regulatory requirement, etc.)?
 - d) (If utility/program has segment-specific goals) Do you have any savings or spending mandates for specific segments (e.g., low-income)?
- 2) Do any of the program offerings overlap with other programs in your business portfolio? If so, how does this affect your program goals? (Probe for why measures are part of a larger program or separate)
- 3) How does the program fit within your overall portfolio goals? How much of your overall portfolio energy savings is contributed by the program?
 - a) Has your program's contribution to the overall plan changed since its inception? How so? Why?
- 4) Overall, how effective has your program been in achieving these goals and objectives (Probe for actual or estimated savings, cost-effectiveness)?
 - Are there ways you think the program could be more effective in achieving its goals?
 - What is your cost effectiveness for the program?

Measures and Incentives

- 1) What types of measures are offered by your program (*Probe for similarities and differences to Xcel Energy's program, including custom vs. prescriptive and downstream vs. mid/upstream*)?
 - a) Of those measures, which comprise the bulk of the program participation in terms of participation numbers? In terms of energy/demand savings goals?
 - b) How have these measure offerings changed over the last few years? (*Probe specifically if they have added any measures to their prescriptive offerings*)



- c) Does your program offer a midstream or upstream incentive for distributors/manufacturers? If so, what types of lighting measures are offered? What type of customer data do you require from distributors for each sale? Has the midstream program to be successful – why or why not?
 - d) What process do you undertake to review and approve new prescriptive lighting measures? How does the prescriptive rebate program remain flexible in the face of a rapidly evolving lighting market with new technologies, applications, and falling prices?
 - i. Have you converted to a T8 baseline for LEDs?
 - ii. Do you still take savings for some portion of T12 lighting in commercial applications?
 - e) How does your organization handle other types measures targeted to small business or small commercial customers (e.g., refrigeration)? Do you have a comprehensive small business program? If not, how do you ensure all opportunities are addressed at each customer's facility?
- 2) How are the incentive levels for your measure offerings determined? *(If needed: are they based on estimated incremental costs and/or other factors? Custom vs. prescriptive incentives?)*
- a) What are your current rebate levels? Do rebate levels changes at any points throughout the year (e.g., rebate bonuses)?
 - b) What percentage of the customer's project costs do you fund? Is there a cap (probe for caps with and without bonuses if offered)?
 - c) *(If custom incentives offered)* Do you have any payback period, caps to rebate amounts, incremental cost thresholds, or cost-effectiveness criteria for rebate approval?
- 3) Have incentive levels changed over time? If yes...
- a) How have they changed?
 - b) Why did you make these changes?
- 4) What documentation or approvals are required to receive a rebate?
- a) Is preapproval required? If yes, under what circumstances would a rebate be denied for a project or customer that was initially pre-approved?
 - b) Have you had any problems obtaining correctly completed documentation from customers or trade partners? If yes, what problems have you had and what steps have you taken to address them?

Marketing and Recruitment

- 1) What are your customer eligibility requirements for the program?
- 2) What is your target market for the program? How do you identify potential candidates? What are your top segments?
- 3) What is the process for recruiting customers for the program, and who does this?
 - a) Do account managers have any outreach or recruitment goals for the program? How are those tracked?
 - b) Do you use any outside contractors or implementers for customer recruitment or providing other services to customers related to the program? *(Note we are not talking about trade partners here; will investigate role of trade partners later in interview)*
 - c) What types of customer marketing efforts do you use? What is the relative success of different marketing activities?
- 4) Are customers able to implement eligible projects through any of your other programs?
 - a) What factors go into customers choosing one program over another?
 - b) How does this affect your marketing strategy, both at the program and portfolio level (Probe how they avoid 'competing' with their other program offerings)?
 - c) How does this affect setting program-level participation and energy savings goals?
- 5) What are the major barriers to participation?
 - a) Do these vary by customer types (or segments)?
 - b) What strategies have you used to overcome these barriers? How effective have these strategies been?
- 6) Do you offer online or digital rebate applications for the program? If yes...
 - a) Do you know what proportion of applications come in digitally versus on paper?

Trade partner Outreach

- 1) How does the program leverage the trade partner market infrastructure? *(Probe about different market actors within the supply chain)*
- 2) What types of trade partners typically participate in the program (e.g., study providers, installation contractors, distributors, ESCOs, engineering consultants, etc.)?
 - a) What roles do these trades play in the delivery of program?



- 3) What types of information, training, or support do you provide to trade partners?
- 4) Do trade partners receive incentives from your program?
 - a) *(If yes)* What are the incentive levels, and what is required of the trade partners to get them?
 - b) *(If no)* Have you ever offered these incentives? (If yes) Why did you eliminate the incentives?

Program Impacts

- 1) How is program participation tracked?
 - a) How do you verify that midstream/upstream measures are sold to customers of your utility?
 - b) Are individual customers that purchase midstream/upstream measures tracked, or just overall sales?
- 2) Do you use any net-to-gross or spillover calculations for the program?
 - a) At what level (e.g., measure, program, portfolio level)?
 - b) How were those estimates derived, and what are the results? Can we see a copy of the study?
- 3) How are you seeing the market transform through your customers and trade partners?
 - a) What influence do you think the program had on these market changes? Why do you say that?
 - b) How has the program adapted to these market changes to sustain impacts?

Lessons Learned and Program Outlook

- 1) What are the key lessons you have learned from your experiences administering the program?
- 2) What do you see as future opportunities and/or challenges for the program?
- 3) Do you have any specific growth strategies you are pursuing in your market? (Probe: measure offerings, customer market segments)?



Wrap-Up

- 1) Are there any other topics that we have not covered in this interview that we should be aware of?
- 2) Do you have any program documentation (e.g., program filings/plans, status reports, FAQ sheets, evaluation results) that you would be willing to share with us?

Verify name, title, and email address for receiving the summary of study findings (if desired).

Name: _____

Title: _____

Email: _____

APPENDIX I: MARKET EFFECTS RESEARCH RECOMMENDATIONS

This appendix overviews the current industry thinking regarding market transformation resulting from utility demand side management programs and presents recommendations for assessing and monitoring market effects from Xcel Energy's programs in future evaluation research.

I1. INTRODUCTION

Demand side management (DSM) programs often include market transformation goals. Market transformation goals seek to overcome significant barriers to the adoption of energy efficient equipment or practices in the market place through coordinating tactics such as education, training, product demonstration, marketing, rebates, and other financial incentives. Examples of barriers include market actor and consumer awareness, performance, availability, incremental cost, difficulty of retrofit, and number of producers. Market effects result from DSM programs when they are able to positively change market barriers in a way that would allow greater penetration of the energy efficient technology.

The California Strategic Plan states that:

Market transformation activities do not produce the same short-term, or easily measured or apparent, results as resource acquisition programs. However, they can result in much larger, medium- to long-term results that can yield a much larger payoff.

A challenge is measurably quantifying market transformation resulting from Xcel Energy programs in order to capture all of the energy savings resulting from Xcel Energy's programs. To most effectively address this challenge, we suggest focusing on measuring market effects—as leading indicators of market transformation—as opposed to the larger task of measuring market transformation. Market effects are defined as “spillover savings that reflect significant program-induced changes in the structure or functioning of energy efficiency markets.”²² While the market effects indicators will vary depending on the nature of the market and the product or service or program, some are nearly always applicable: market share for energy-efficient products and services, the saturation of such products or prevalence of services; the price of energy-efficient products or services compared to less efficient alternatives; their availability; market actors' perceptions, knowledge, and possibly awareness of the products or services; and, ultimately, net energy and demand savings.²³ These are all indirect indicators that can help build up a preponderance of evidence to make the case that the market has changed because of program activity.

I2. MARKET EFFECTS RESEARCH

²² Prahl, R., Ridge, R., Hall, N. and W. Saxonis. 2013. “The Estimation of Spillover: EM&V's Orphan Gets a Home.” In Proceedings of the 2013 International Energy Program Evaluation Conference. Chicago, August 13-15. Accessed November 11, 2014 from <http://www.iepec.org/conf-docs/conf-by-year/2013-Chicago/095.pdf>.

²³ NMR Group, Inc., 2013. “A Review of Effective Practices for the Planning, Design, Implementation, and Evaluation of Market Transformation Efforts”, CALMAC Study ID PGE0330.01, prepared for Pacific Gas & Electric, San Diego Gas & Electric, Southern California Edison, Southern California Gas. http://www.calmac.org/publications/FINAL_NMR_MT_Practices_Report_20131125.pdf

While a number of evaluation studies have been conducted in recent years to estimate market effects, most of these efforts have not estimated *net* energy market effects, or effects attributable to programmatic activities. Instead, they have concentrated on measurement of indicators such as awareness, sales, and changes in practices by market actors. Evaluations estimating net market effects with energy estimates are still at an early stage of development. Two major limitations are that these studies, which employ the highest levels of rigor, are expensive and take place over a long period of time. However, this is a critically important field of research since the market effects of energy savings resulting from utility energy efficiency programs are likely to be substantial once documented.

California has been leading the nation in looking at market transformation and ways to credit investor-owned utilities (IOUs) for market effects resulting from their programs, and they have funded a series of multi-staged market effects studies (available on www.calmac.org). In 2013, NMR conducted a literature review to identify and summarize effective practices in support of market transformation from both programs and the literature for consideration by the California investor-owned utilities.²⁴ In this review, NMR identified the following effective planning, design, implementation, and evaluation practices in support of market transformation program approaches, which illustrate the cost and time needed for these types of studies.

1. Identify target markets
2. Characterize the market
3. Identify the baseline and ensure ample savings are possible
4. Develop a market model
5. Develop program theory and logic model and match program theory to market characterization
6. Develop a market transformation story
7. Establish interim and long-term indicators of market effects
8. Articulate an exit or transition strategy for when transformation is complete
9. Continue to measure and monitor key market indicators after transition
10. Work with markets by doing the following:
 - Recognize and use market forces
 - Find market allies who are willing to work with the program
 - Promote competition
 - Share risks with other market actors

²⁴ Ibid. NMR Group, Inc., 2013. "A Review of Effective Practices for the Planning, Design, Implementation, and Evaluation of Market Transformation Efforts", CALMAC Study ID PGE0330.01, prepared for Pacific Gas & Electric, San Diego Gas & Electric, Southern California Edison, Southern California Gas. http://www.calmac.org/publications/FINAL_NMR_MT_Practices_Report_20131125.pdf.

- Use upstream market actors to influence downstream adoption of energy-efficient products and services.
- 11. Identify and promote non-energy benefits to the product or service
- 12. Leverage resource acquisition tools or programs
- 13. Take the innovation adoption curve into account:
 - Focus on early adopters in opening markets for innovative products, including energy-efficient products
 - Avoid the “chasm” between adoptions by innovators and the general public.
- 14. Form a market-based advisory group to help shape and review the program

In their literature review, NMR also stated that effective program evaluation includes the following practices:

1. Match the evaluation strategy to the program logic
2. Track indicators tied to expected outcomes
3. Perform regular, ongoing research into the status of the market
4. Assess market effects periodically
5. Refine the program theory and logic model

The Massachusetts Program Administrators have also pursued a limited number of market effects studies—including the 2010 market effects study of C&I High Bay Lighting,²⁵ the ongoing Market Effects Baseline study for LEDs, the Residential New Construction Net Impacts Study,²⁶ and the Statistical Analyses of Penetration of ENERGY STAR-compliant Appliances.²⁷

In both California and Massachusetts, Program Administrators are tasked with developing Market Transformation Indicators (MTI) by which to measure the outcomes if they cannot be measured directly, establishing baseline measurements for each indicator, and conducting periodic research to track progress toward the outcomes.²⁸

²⁵ KEMA 2014, *HBL Market Effects Study*, <http://ma-eeac.org/wordpress/wp-content/uploads/High-Bay-Lighting-Market-Effects-Study-Final-Report.pdf>.

²⁶ NMR 2014, *Massachusetts New Construction Net Impacts Report*, <http://ma-eeac.org/wordpress/wp-content/uploads/Residential-New-Construction-Net-Impacts-Report-1-27-14.pdf>.

²⁷ Summarized in Wilson-Wright *et al.*, 2005 “Front-loading Marketing: Assessing Cumulative Effects of ENERGY STAR® Appliance Promotions on State-by-State Market Penetration Levels,” <http://www.iepec.org/conf-docs/papers/2005PapersTOC/papers/079.pdf>.

²⁸ NMR Group, Inc., 2013. “A Review of Effective Practices for the Planning, Design, Implementation, and Evaluation of Market Transformation Efforts”, CALMAC Study ID PGE0330.01, prepared for Pacific Gas & Electric, San Diego Gas & Electric, Southern California Edison, Southern California Gas.

13. MARKET EFFECTS INDICATORS FROM COLORADO SMALL BUSINESS LIGHTING PROGRAM EVALUATION ACTIVITIES

As part of the 2016 evaluation of the Small Business Lighting program, the evaluation team investigated several qualitative market effects indicators through primary research with program staff, participating trade partners, vendors identified by customers as being influential in their decision-making, and participating and nonparticipating customers. Research findings indicate that program attribution is high, a majority of nonparticipating customers are unaware of the program, and performance concerns, capital investment, and initial purchase costs are significant barriers to nonparticipants. This research suggests limited market effects indicators to date, although trade partners speculated that the program will play a significant role in the rapidly evolving lighting market transition to LEDs as, in their experience, the program already is a pivotal factor in customers' decision-making.

Influential vendors' responses were in line with the quantitative results of the interviews and surveys: while they reported that the program is an influential factor in their promotion of program-qualifying equipment, there are some other factors that also play a role. In addition to the program offerings, vendors mentioned that energy savings, energy independence, the environment, and ROI influence the recommendations that they make for program-qualifying lighting measures. They rated the influence of the program, including incentives, program services, events and information from Xcel Energy on their decision to recommend the purchase or installation of the program-qualifying measures to a customer as 6.6 on a scale of 1 to 10. On average, the vendors rated their likelihood to recommend the specific measure to the customer had the program not been available as a 7.1 out of 10. Vendors also described impacts of the program and experiences with the program; one indicated previous participation in the LED Instant Rebate program helped them navigate their first experience participating in the Small Business Lighting program. However, another vendor reported recommending cheaper, poorer-quality fixtures to customers due to reductions in rebate amounts.

Most participating trade partners did not report any changes in the percentage of sales situations in which they recommend high-efficiency lighting or services. However, most trade partner interviewees believed that the program has influenced their sales and/or installations and nearly all believed that the program increased the size and/or number of lighting projects. In addition, interviewees reported a significant increase in their sales since first participating in the program. Most said that they actively leverage the program to increase the attractiveness of their projects, several called the program "an in" to engaging customers into working with them, and others found success resulting from the customer leads that the program provides. A few thought it made their companies more competitive in the market. Interviewees speculated that the program will play a significant role in the market transition to LEDs in the next two years as, in their experience, the program already is a pivotal factor in customers' decision-making.

Only one-fifth of participating customers reported that their organization has corporate policies related to energy efficiency standards that must be considered when purchasing new equipment or making improvements. Echoing the barriers mentioned by trade partners in investing in efficient lighting, most of these customers with corporate policies (19 of 25) indicated that they only purchased energy efficient equipment if it meets specific ROI or payback criteria, which the program is designed to help overcome.

Few nonparticipating customers report having any corporate policies related to energy efficiency standards (12 percent). Similar to participating customers, three of the four with a corporate policy said they purchased energy efficient equipment only if it meets payback or ROI criteria. When asked to rate the level of importance of various business factors when considering new equipment, nonparticipants rated performance concerns the highest, followed by capital investment and initial purchase costs. Incentivizing high quality lighting works to overcome these potential decision-making barriers.

While about one-half of the eligible nonparticipant respondents were aware of Xcel Energy's energy efficiency programs (18 of 34), only 10 (29 percent) said they were aware of the Small Business Lighting program specifically after given a description of the program. However, trade partner interviewees observed an increase in customer awareness of the SBL program over the past year (September 2015 through August 2016), attributing it to customers' growing awareness of rebate programs and Xcel Energy's active promotion. Trade partners attributed this increase to the program's promotional efforts, although all 15 trade partner interviewees reported that they introduce the program to their customers as well.

Over one-quarter of nonparticipant respondents reported installing energy efficient lighting in the past two years (27 percent), and an additional 32 percent of respondents said they have considered installing energy efficient lighting. These findings suggest that some business customers implement energy efficient lighting on their own without financial or technical assistance from Xcel Energy, which is consistent with the SRA free-ridership and spillover results.

14. RECOMMENDATIONS FOR MONITORING MARKET EFFECTS IN FUTURE EVALUATION RESEARCH

One challenge within Xcel Energy's current evaluation framework is that a broader look at market effects (and therefore nonparticipant spillover) is at the market, instead of program, level as discussed in the California Market Transformation Scoping Study:

*Market transformation is a change in the structure of a market or the behavior of participants in a market that is reflective of an increase in the adoption of energy efficient products, services, or practices and is causally related to market intervention(s).*²⁹

This definition stresses the market rather than the program nature of market effects. Massachusetts also focuses on markets, rather than individual programs.

Because Xcel Energy may offer multiple programs to a target market that may be evaluated in different years, it may be challenging to take a broader look at the market in a given evaluation year. Over time, the evaluation cycle could be configured to evaluate programs that serve the same market in the same year to think more comprehensively about establishing measureable market effects indicators. The need to look broadly at the market also supports the need for the

²⁹ Joe Eto, Ralph Prahl, and Jeff Schlegel. *A Scoping Study on Energy-Efficiency Market Transformation by California Utility DSM Programs*. (Berkeley, CA: Ernest Orlando Lawrence Berkeley National Laboratory, 1996). LBNL-39059UC-1322, 9.

evaluations to include periodic baseline surveys either instead of or in addition to the nonparticipant surveys that currently take place each year for an evaluated program.

With these consideration in mind, we recommend the following potential evaluation activities be considered in the future to measure and monitor market effects on a program-by-program basis for prioritized DSM programs for future evaluation efforts. This will allow evaluators to more fully document and describe all of the impacts resulting from Xcel Energy's programs.

1. Identify and prioritize those programs or markets where significant nonparticipant spillover is expected and additional research makes the most sense to fund. We make this recommendation as market effect studies can be expensive and take more time than permitted by the current annual program evaluation framework.
2. **For prioritized programs or markets, develop the framework from which market effects are to be evaluated.** As described earlier in this appendix, this step would include identifying the target markets, conducting research to characterize the market, identifying the baseline and ensuring that adequate savings are possible, developing a market model, developing program theory and logic models, and developing a market transformation story. This logical framework is critical to establish the most appropriate market transformation indicators that can be measured over time.
3. **Assess past research to support near-term program market effects research and consider implementing comprehensive market characterization and baseline studies going forward.** Market effects looks at longitudinal changes or what has taken place in the market *over time*. In order to do this, a baseline is important in order to quantify changes. A similar approach should be taken with the DSM market effects research in order to measure trends over time. Market transformation indicators examined in these studies could include:
 - Customer awareness/knowledge of energy efficient product
 - Customer acceptance/adoption
 - Customer awareness/knowledge of Xcel Energy program offerings
 - Saturation/penetration
 - Barriers to taking energy efficiency actions

Xcel Energy has been conducting evaluation research and other DSM program research for a number of years. We recommend in the near term that Xcel Energy and evaluators assess past research that can serve as a baseline for future evaluation research.

4. **Consider expand both the number and scope of trade partner surveys for prioritized programs or markets.** One of the highest levels of rigor to quantify market effects involves tracking sales data. However, while preferable due to the objectiveness of the information, sales data can be difficult to obtain. Manufacturers, distributors, and vendors are protective of their sales information as that could be considered competitive intelligence. Additionally, it is important that sales studies include a representative population of manufacturers/distributors/vendors; we have seen that participants in

studies such as this may be the most active groups, which can bias the results. Last, developing a robust sales database and identifying trends over time can be a very time intensive and expensive endeavor.

In the absence of reliable sales data, we generally recommend using vendor surveys to estimate sales volumes. Vendors can be asked about sales volumes and efficient equipment sales shares for conditions with and without the program, or for in-territory and comparison area sales. This approach can be analyzed similarly to market-level sales data, although data needs to be reviewed carefully as vendors may not be able to provide accurate estimates. The difference is that the market sales data approach usually refers to comprehensive or nearly comprehensive reporting of sales (of trade partners participating in the study). By contrast, vendor surveys may collect “best guess” estimates of sales volumes and shares from a sample, then use sampling weights and other measures of size (such as employment) to expand the survey responses to the full market. This is an industry accepted approach recently used in market effects studies such as for the Massachusetts C&I New Construction High Bay Lighting Market Effects study being conducted for different utility Program Administrators.

This would require a much more robust sample than what is currently being used in annual program evaluation scopes. For prioritized programs, we would recommend a census sample of all participating trade partners be used from the last three years as well as including a sample of nonparticipating trade partners. We believe a robust trade partner sample could be done most cost-effectively through an internet survey with a census sample of vendors with follow-up phone calls to non-responders.

Examples of market transformation indicators examined in these trade partner surveys could include:

- Market actor awareness/acceptance/adoption
 - Market share/sales with and without program in Xcel Energy's territory
 - Influence of program on market share/sales
 - Market share/sales without program in other territories
 - Product availability
 - Incremental cost
 - Participation in trainings/education provided by Xcel Energy
 - Customer decision-making practices
 - Customer demand over time
5. **Consider implementing Delphi expert panels to estimate nonparticipant spillover and other attributable market effects for prioritized programs.** A challenge with market effects is also attributing changes to utility program efforts since programs are only one of many influences in a market. Market effects can be difficult to disentangle from other external factors such as the economy, fuel prices and federal programs. Some of the recent market effects studies in California and elsewhere (Arizona) are

employing Delphi techniques³⁰ to review prior research and current research on market transformation indicators to estimate nonparticipant spillover. A particular value of the Delphi approach is providing a defensible attribution estimate of market effects specific to utility programs.

A typical study presents expert panelists with detailed data regarding practices, sales, and other market transformation indicators. Panelists are asked to complete two rounds of detailed surveys. The second round provides a comparison with other panelists' responses and logic, and allows the panelists the opportunity to change their answers. Panelists can be asked to estimate the proportion of electricity and natural gas savings attributable to a utility program and to other factors such as economy, energy prices, etc., and to estimate the percentage of net savings attributable to the program.

³⁰ The Delphi technique is often characterized as a group communication process or forecasting method that relies upon a panel of experts to develop an estimate or group judgment on a topic or issue. It is an iterative process that involves at least two rounds of questions or interviews with the panels. The Delphi technique is based on the principle that structured responses from experts will be more accurate than unstructured responses from individuals (Hsu and Sandford 2007; Linstone and Turoff 1975; Ludwig 1997).

<i>Recommendation</i>	<i>Response</i>
1. Tetra Tech recommends NTG ratios for near future program years of 89 percent for downstream rebates, 90 percent for the direct install channel and 92 percent for the LED Instant Rebate program	The Company will adopt the recommended NTG ratios effective with the launch of the CO DSM 17/18 plan.
2. Consider the efficiency advantages to integrating the direct install components of the SBL and Commercial Refrigeration programs.	The Company recently extended the contracts for the two program implementers through 2018. The Company will continue to coordinate efforts between the two programs to ensure customers are served efficiently and effectively.
3. Continue ongoing reviews of instant discount levels and leverage qualifying products lists to adapt to the ongoing market evolution. In addition, consider shifting more LEDs from the prescriptive to the LED Instant Rebate track.	The Company will continue ongoing reviews of rebate levels as the market costs shift downward. The Company is adopting the most recent version of ENERGY STAR 2.0 for the qualified products list. Evaluation of shifting LEDs from prescriptive to the LED Instant Rebate track will be performed in 2017.
4. Maintain current internal communication processes and continue to ensure there are adequate resources to effectively administer program functions. Encourage staff to continue to expand their abilities to maintain the high level of support that they currently provide to trade partners and customers.	The company will continue to train internal stakeholders and encourage developmental opportunities to ensure high quality customer service and program administration.
5. Continue promoting the program in order to reach customers who are unaware of the program and encouraging trade partners to promote the program to their clients. Prioritize direct engagement between Xcel Energy and the customer when communicating program details to customers - email may be the best channel for establishing this connection.	The Company is working with program implementer CLEAResult to develop a robust email marketing strategy for unaware customers. This marketing strategy will be deployed in the first quarter of 2017.

<p>6. Continue developing relationships with and communicating with trade partners to ensure a positive and smooth customer experience. Leverage both CLEAResult and the trade partner newsletters and continue to make Xcel Energy representatives available to assist trade partners with customers.</p>	<p>The Company will continue developing relationships with trade partners to ensure customers receive a positive experience with the program. Currently the program provides monthly newsletters to distributors participating in the Instant Rebate Program, a quarterly performance scorecard for trade participating in the SBL program, trade workshops, trade partner recognition throughout the year and trade partner advisory boards where trade partners provide input and feedback on various aspects of the business lighting programs.</p>
<p>7. Consider ways to simplify the custom application and improve the transparency of custom rebate calculations to trade partners and participants, if possible.</p>	<p>The Company will continue to investigate ways to simplify the custom application process and rebate calculations. The Company is looking at other utilities for best practice and increased transparency to the potential savings and rebate amount.</p>
<p>8. Allow for information transfer between prescriptive and custom applications or consider integrating them into a single application.</p>	<p>The Company will evaluate combining Custom and Prescriptive applications to allow for information transfer for multiple projects.</p>
<p>9. Continue offering competitive rebate levels, useful tools, and strong customer service.</p>	<p>The Company will continue to offer competitive rebate levels through market cost analysis, offering useful tools such as the Designlights Consortium information sheet and strong customer service through the energy efficiency specialists and account managers.</p>
<p>10. Consider offering a wider selection of LEDs through the LED Instant Rebate program, evaluating the impacts on program cost-effectiveness.</p>	<p>The Company will consider expanding its current offerings of LED products through the LED Instant Rebate program provided the new rebates are cost effective and part of the future program strategy.</p>

<p>11. Continue supporting contractors in their efforts to educate customers. Focus on improving customer-facing materials that help customers understand program processes and lighting technologies.</p>	<p>The Company will continue to develop and distribute customer facing marketing materials.</p> <p>In addition, the Company will create LED technology snapshots for customers to better understand the pros and cons of LED technology as well as the various technology options such as full fixture replacement, retrofit kit, and lamp replacement options. Existing program materials such as case studies, a Small Business Lighting program FAQ and LED rebate information sheet can be found on the Company's website, here: https://www.xcelenergy.com/programs_and_rebates/business_programs_and_rebates/equipment_rebates/small_business_lighting</p>
<p>12. Continue to push marketing to engage customers that are considering energy-efficient lighting, in particular LEDs</p>	<p>The Company's third party implementer CLEAResult has identified strong customer leads by performing on-site assessments. Follow-up customer engagement strategies will continue through the program year to increase the number of participants.</p>
<p>13. In addition to focusing on LEDs, follow through with the promotion of advanced lighting controls under the custom program. Once integrated, investigate how - if at all - controls could be included in the prescriptive track. In addition, educate trade partners on the benefits of advanced lighting controls.</p>	<p>The Company will create a new application for advanced lighting controls and will promote the offering through the existing programs. The Company will create informational marketing materials to help educate customers and trade partners on the benefits of advanced lighting controls. The Company hosted a trade partner training in December of 2016 educating trade partners on the rules and requirements, rebates, and benefits of the new offering. After the offering achieves participation through the Custom channel, the Company will evaluate the opportunity to create a prescriptive rebate offering.</p>