EMI CONSULTING

Xcel Energy
School Education Kits Product
2018 Evaluation

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FINAL
REPORT

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Introduction

Xcel Energy contracted with EMI Consulting to evaluate the 2017 School Education Kits product in Colorado. The School Education Kits product encourages energy savings through educational materials and direct install measures provided to fifth and sixth grade students whose teachers enroll in the product. Students participate in classroom activities and bring home kits containing energy efficiency measures to install in their homes. The kits include a variety of direct install measures such as LED bulbs, an LED nightlight, a kitchen faucet aerator, a bathroom faucet aerator, and a low flow showerhead. The 2018 evaluation of the School Education Kits product consisted of both an impact evaluation and a process evaluation. The process evaluation focused on teachers' experiences presenting the educational materials to students and parents' experiences as the students install measures from the Take Action Kits and estimate potential energy savings. The impact evaluation focused on free-ridership associated with the measures contained in the kits and spillover associated with increased awareness of energy efficiency measures and motivation to install such measures in participants' homes.

Methods

Staff interviews (n=3)

Participating household web survey (n=109)

Participating teacher web survey (n=153)

Participating teacher web interviews (n=13)

Peer utility interviews (n=4)

Fielding:
April 2018 – July 2018

Key Findings

Both households and teachers are **very satisfied with the product**. 94% of households and 93% of teachers were very or extremely satisfied with the product overall.

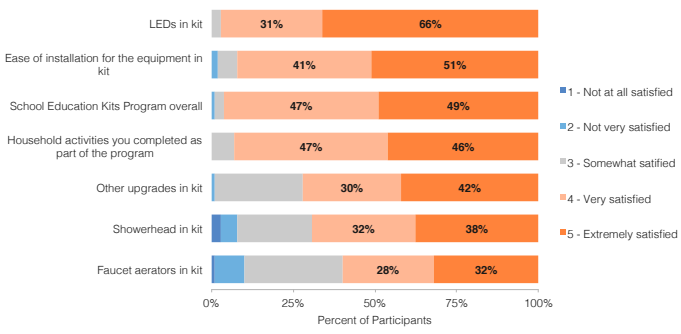
Product free-ridership is estimated to be 32% while spillover is estimated to be 35%. As a result, the evaluation team estimated product NTGR of 1.03 and recommends maintaining an **NTGR of 1.0** for the School Education Kits product.

Installation rates for energy efficient showerheads and faucet aerators was lower than the Home Energy Worksheet estimates. These discrepancies highlight that only about half of households that say they "will install" a measure in the worksheet actually install it.

29% of teachers in schools with a high percentage of students on free lunch said the number one reason for participating was providing the kit measures, compared to 0% of teachers with a low percentage of students on free lunch.

Product Satisfaction

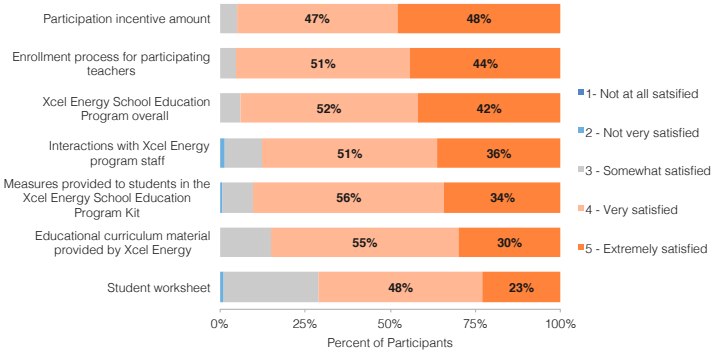
Household Satisfaction



83% of participating households were **very or extremely satisfied** with all product components or all but one product component.

97% household participants were **very or extremely satisfied** with the LEDs included in the product kit.

Teacher Satisfaction



Over 50% of teachers were **very or extremely satisfied** with all product components.

95% of teachers were **very or extremely satisfied** with the participation incentive.

Executive Summary

2018 Colorado School Education Kits Product

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Detailed Findings

Impact Findings

Free-ridership was estimated at 32% based on participating household survey results. Households indicated that the product was influential on their decision to install the kit LEDs but may have installed LEDs at some point without the product.

Because the School Education Kits product helps promote energy efficiency education, households said their participation helped spur additional energy efficiency investments. As a result, **product spillover was estimated at 35%.**

Based on the free-ridership and spillover estimates**, the estimated NTGR for the product is 1.03**, **with a 90% confidence interval of 0.88 to 1.18**, accounting for the product's influence on households' decisions to install energy efficient equipment.

Over 98% of participating households installed at least some of the kit LEDs, compared to 56% that installed the energy efficient showerheads and 42% that installed the faucet aerators. These **installation rates are lower than the Home Energy Worksheet estimates, reflecting that not all households that said they "will install" kit measures actually end up installing them.**

Participating households are familiar with LEDs prior to participating as **71% already had LEDs installed in their home. However, installation rates for LEDs were still high (98%) as was household satisfaction (97%), indicating customers still value the LEDs as the most useful equipment in the Take Action Kit.**

Process Findings

Teachers and peer utilities indicated in-school demonstrations can be beneficial for students. In-school presentations can help showcase the kit measures and further promote energy efficiency.

Households indicated they are interested in learning about additional ways to save energy. **The number one recommendation from parents was for Xcel Energy to provide resources about additional energy efficiency products and ways to save.**

Teachers in schools with a high percentage of students on free lunch programs said providing the kits to their students was a primary motivation for participating, while teachers with a low percentage of students on free lunch programs put more emphasis on the opportunity to teach energy efficiency to their students.

Conclusions & Recommendations

The School Education Kits product is functioning well and providing energy efficient equipment to households that are installing equipment, learning about efficiency, and becoming interested in other opportunities to save energy.

Maintain the product NTGR of 1.0 to reflect the high level of household spillover.

Decrease the installation rates for energy efficient showerheads and aerators to account for households that said they "will install" measures but did not end up installing.

Consider targeting low-income schools that will benefit most from the access to energy efficient equipment and educational material the product provides.

Explore feasibility of additional kit measures such as outdoor solar lights, energy efficient power strips and smart thermostats as market saturation increases for current kit measures going forward.

Consider opportunities for in-school demonstrations and trainings by Xcel Energy or third-party implementation staff.

Include information pamphlets in the kits that provide resources for households looking for additional ways to save energy.

1. INTRODUCTION

Xcel Energy offers a comprehensive array of demand side management (DSM) and other energy services and products to its customers. For the evaluations of its product offered in 2017 and 2018, Xcel Energy sought to improve the customer experience, understand the products' roles in changing the marketplace, analyze the product influences on customer choices, and ensure industry-leading program performance. To accomplish these goals, Xcel Energy contracted with EMI Consulting and its partners: Evergreen Economics, Apex Analytics, and Ridge & Associates (hereafter 'the evaluation team'). This team undertook evaluations of nine products offered in Colorado and Minnesota in 2017 and 2018, including the School Education Kits product in Colorado discussed in this report.[1] This introduction includes an overview of the product and the evaluation approach, and describes the organization of this report. The report highlights the evaluation of the 2017 Xcel Energy School Education Kits product.

1.1 Product Overview

Energy efficiency school kit programs are an effective way to achieve energy savings while educating and reaching out to residential and hard-to-reach customer segments, such as residential customers residing in multifamily residences. They can also be an effective and innovative way to introduce customers to emerging and/or unfamiliar energy efficiency technologies, thereby increasing the market saturation and awareness of these technologies.

The Colorado School Education Kits product encourages energy savings through educational materials and direct install measures provided to fifth or sixth grade students whose teachers enroll in the product. Students participate in classroom activities and bring home kits containing energy efficiency measures to install in their homes. The kits include a variety of direct install measures such as LED bulbs, an LED nightlight, a kitchen faucet aerator, a bathroom faucet aerator, and a low flow showerhead, which are distributed by an implementation firm, AM Conservation.

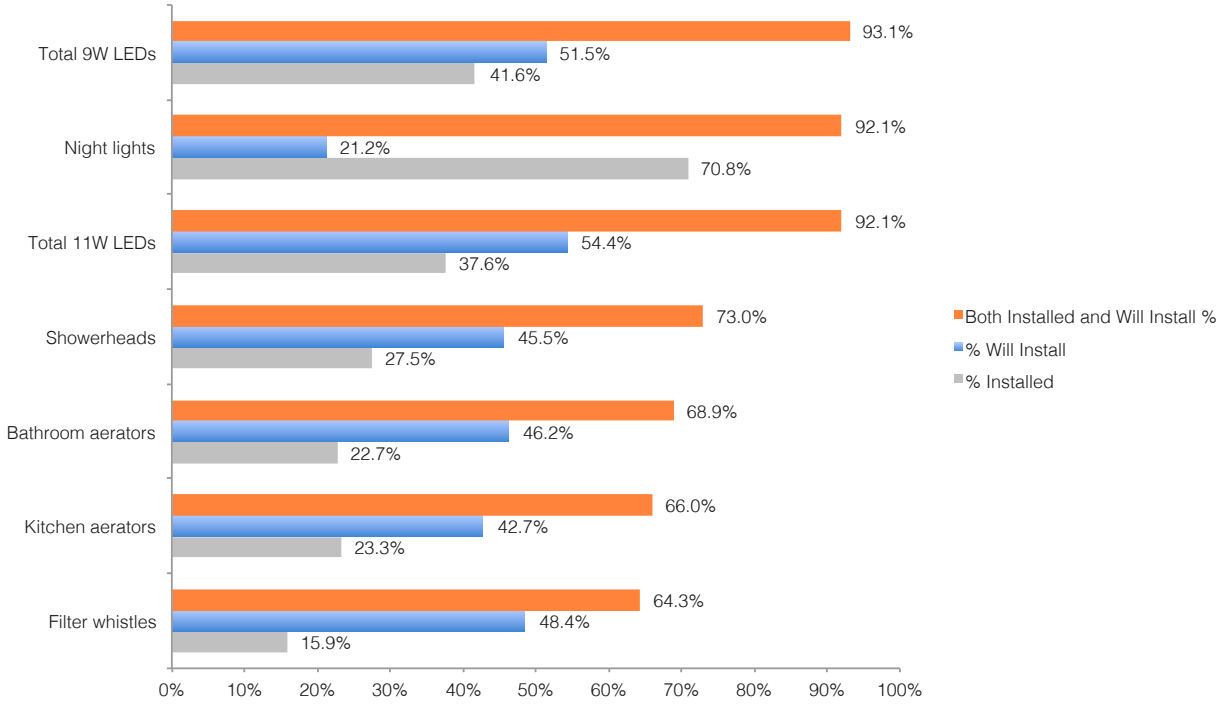
The product includes two sign-up periods each school year, once during the fall semester and again during the spring semester. Once teachers enroll their classes in the product, they choose a date they would like to receive the materials, which include the kits containing the energy efficiency measures and the educational lesson plans. Teachers can choose to implement as much or as little of the lesson plan material as they desire, depending on how the material corresponds to their existing lesson plans. When the kits are distributed, students are asked to review and complete a Home Energy Worksheet, which includes instructions for installing each measure and provides formulas to estimate the potential energy savings from the energy efficient measures in the kit. The Home Energy Worksheets are then either collected and mailed in by the participating teacher or uploaded to AM Conservation's online worksheet portal. The product offers teachers a tiered reward structure based on mailing back or uploading a certain percentage of their students' completed Home Energy Worksheets. The reward structure includes $10 for teachers that return less than 50% of their

[1] The products selected for evaluation in 2017 include Commercial Refrigeration (CO), Cooling Efficiency (CO), Data Center Efficiency (CO), Insulation/Air Sealing (CO), Residential Heating, (CO), Data Center Efficiency (MN), Heating Efficiency (MN), and Insulation Rebate (MN). The evaluation team prepared a separate report for each of these evaluations.

students' completed worksheets, $15 for returning between 50 and 79% of the completed worksheets, and $25 for returning 80% or more of the completed worksheets.

In 2017, the Colorado School Education Kits product distributed 38,633 kits to 1,104 classrooms across the state. Of those households that received kits, 17,563 returned Home Energy Worksheets (46%) with responses to questions on whether particular measures were installed, would be installed, or would not be installed in the home. As shown in Figure 1-1, students that returned the Home Energy Worksheets reported a high level of installation for the majority of measures included in the School Education Kit. For example, over 90% of responding students reported they had already installed or were planning to install the 9W and 11W LED bulbs and the LED nightlight. Installation rates for 2017 were greater than the rates reported in previous product years due to the replacement of CFLs with LED bulbs and because the 2017 product year accounted for households that were planning to install the kit measures in the near future.

Figure 1-1. 2017 Installation Rates



As a result of these increased installation rates, Table 1-1 and Table 1-2 show that the School Education Kits product significantly exceeded both their natural gas and electric targets in 2017. Other factors that contributed to these increased savings include switching out CFLs for LEDs, greater teacher retention from previous years of participation, and "follow-up communications to emphasize the importance of installing the provided measures." [2]

[2] Xcel Energy, *Demand-Side Management Annual Status Report 2017,* March 31, 2018.

Table 1-1. Xcel Energy School Education Kits Product Natural Gas Participation, 2017

Product Year	Natural Gas Participants	Budget	Actual Expenditures	Projected Savings (dth)	Actual Savings (dth)
2017	39,244	$438,447	$525,238	34,972	64,806

Table 1-2. Xcel Energy School Energy Kits Product Electric Participation, 2017

Product Year	Electric Participants	Budget	Actual Expenditures	Projected Savings (kWh)	Actual Savings (kWh)
2017	38,633	$1,419,329	$1,550,719	5,672,969	8,956,353

1.2 Evaluation Overview

The evaluation team designed a comprehensive evaluation of the School Education Kits product to provide information on five key research topics:

- Participating teacher experiences with the School Education Kits product including the educational material and *Take Action Kits*;
- Participating teacher and household satisfaction with the School Education Kits product;
- Student and household engagement with the *Take Action Kit* measures and educational material;
- Installation rate and usefulness of *Take Action Kit* measures for participating households; and
- The School Education Kits product's influence on households' decisions to install additional energy efficiency measures in their homes.

The 2018 evaluation of the School Education Kits product consisted of both an impact evaluation and a process evaluation. The process evaluation focused on teachers' experiences presenting the educational materials to students and parents' experiences as the students install measures from the Take Action Kits and estimate potential energy savings. The impact evaluation focused on free-ridership associated with the measures contained in the kits and spillover associated with increased awareness of energy efficiency measures and motivation to install such measures in participants' homes.

Impact Evaluation Overview

The Take Action Kits are not available by customer request or through rebates on purchases of energy efficiency measures. Rather, Xcel Energy proactively provides energy kits to participating fifth or sixth grade teachers (who enroll their class and are at schools located within Xcel Energy's service territory) to be distributed to students as part of an overall energy education program. Because the kits are not available without the program, Xcel Energy assumes a net-to-gross (NTG)

ratio of 1.0 for the School Education Kits product.[3] While this seems like a reasonable assumption, the evaluation team's perspective is that it is not the kits that deliver energy savings, but rather the measures contained within the kits—the LED bulbs, faucet aerators, and low-flow showerheads. If the parents of a participating child have already adopted these technologies—which are widely available—into their home, then their receiving of these measures through the kit is a form of free-ridership. Therefore, the evaluation team believes it is necessary to develop estimates of free-ridership for the School Education Kits product.

The evaluation team also believes it is likely that participation in the School Education Kits product increased customer awareness of energy efficiency, and potentially motivated some households to purchase other energy efficiency equipment (e.g., a high efficiency refrigerator) or to complete energy efficiency upgrades (e.g., install additional insulation). Many of these energy efficiency measures will be installed through other Xcel Energy efficiency programs (which would claim any energy savings associated with the new energy efficient equipment or measures), but not all. Energy savings from measures not claimable through another Xcel Energy program (e.g., additional LED bulbs) would be claimable spillover for the School Education Kits product. The evaluation team, therefore, recommended conducting spillover analysis as well as analysis of free-ridership—that is, a complete NTG analysis.

Process Evaluation Overview

The objective of the process evaluation of the School Education Kits product is to understand teacher and student experiences with the technologies included in the kit, including assessing teacher training materials and gauging households' satisfaction with the product.

To address these objectives, the evaluation team interviewed the Product Manager overseeing Xcel Energy's School Education Kits product and two representatives from AM Conservation, the third-party implementer. The interview focused on the roles and responsibilities of product implementation, goals and achievements, marketing efforts, and data tracking. Findings from this interview are presented in the *Xcel Energy CO School Education Kits Evaluation: Staff Interview Summary Notes* memo.

The evaluation team also administered web surveys for participating teachers and parents of children that received a Take Action Kit. The surveys gathered information on overall satisfaction with the product experience, including information on the ease of installing the measures, teachers' opinions of the educational material, and how the product may impact energy practices within households. After completing the web surveys, the evaluation team also completed in-depth interviews with a subset of participating teachers to further probe on teacher satisfaction with the product. The team also conducted a peer review of similar programs implemented in peer utility territories to gather data on best practices and lessons learned through other programs' experiences.

Based on the project kick-off meeting, product review and staff interviews, the evaluation team identified the following key topics and research questions to highlight in the process evaluation tasks, including the parent and teacher surveys:

[3] Xcel Energy 2017/2018 Demand-Side Management Plan Electric and Natural Gas, Public Service Company of Colorado Proceeding No. 16A-012EG, July 1, 2016, revised July 21, 2016 and November 17, 2016, pg. 392 of 507.

- What are the backgrounds for participating teachers, including experience, primary subjects they teach, and their existing views on energy efficiency?
- How well does the educational curriculum material in the Take Action Kits mesh with existing energy curriculum and how do teachers incorporate the material into lesson plans?
- What parts of the product do students engage with the most and how can the material be improved to better fit the needs of households?
- What aspects of the Take Action Kits are households installing most frequently and what measures are most useful for households?
- How satisfied are teachers and parents with the product and what suggestions—including adjustments to the curriculum and/or the measures included in the kit—do both parties have for improving the product going forward?
- How familiar are parents with the energy efficiency measures included in the kits and to what extent were these measures installed in the home prior to receiving the kit?[4]
- How has their experience with the kits, the educational materials provided to their child, and their child's experience with the classroom and related activities influenced them to install additional energy efficiency measures in their home?[5]
- How much influence does the product have on participating households' decisions to install the energy efficiency equipment and what would they have done in the absence of the product? (the net-to-gross ratio, or NTGR)
- How does the Xcel Energy School Education Kits product compare to other similar utility programs?

Table 1-3 below highlights the evaluation objectives, where in Chapters 2 and 3 they are discussed, and the extent to which each individual research task was constructed to inform each objective.

[4] Because Xcel Energy proactively provided the kits through the School Education Kits product (as opposed to as a rebate on a purchase made by a customer), Xcel Energy assumes free-ridership to be zero. (Xcel Energy 2017/2018 Demand-Side Management Plan Electric and Natural Gas, Public Service Company of Colorado Proceeding No. 16A-012EG, July 1, 2016, revised July 21, 2016 and November 17, 2016, pg. 392 of 507).

[5] While the purpose of the kits is to promote energy efficiency among residential customers, Xcel Energy does not assume the School Education Kit product results in increased demand ("spillover") for energy efficiency products.

Table 1-3. Evaluation Objective by Research Task

Report Section	Evaluation Objective	Staff Interviews (n=2/2)	Teacher Web Surveys (n=153/150)	Household Web Surveys (n=109/100)	Teacher Interviews (n=13/12)	Peer Utility Interviews (n=4/6)
2.3	Product free-ridership and NTGR			✓	✓	
3.3	Installation rates & measure persistence		✓	✓	✓	
3.4	Teacher background			✓		✓
3.5	Household characteristics			✓		
3.6	Implementation and enrollment process	✓	✓		✓	
3.7	Educational material		✓		✓	
3.8	Student engagement		✓	✓	✓	
3.9	Product satisfaction and recommendations		✓	✓	✓	
3.10	Peer-utility benchmarking					✓

1.3 Report Organization

The following chapters organize the evaluation findings into two components: impact and process evaluation results. As illustrated in Table 1-3, the data collection activities may have contributed to multiple evaluation objectives. Further detail on the evaluation approach is presented in the following chapters. Chapter 2 reviews the approach and results of the impact evaluation and the attribution of product impacts using a customized NTGR analysis. Chapter 3 discusses the process evaluation components, which addressed participating household and teacher outlooks on energy efficiency, effectiveness of the product material, overall satisfaction, and motivations for participating, among other topics. Conclusions and recommendations are presented in Chapter 4. Detailed, descriptive methodology information, evaluation plans, and survey and interview instruments can be accessed in this report's appendices.

2. IMPACT FINDINGS

A central component of this evaluation was the computation of the net-to-gross ratio (NTGR) for the Xcel Energy School Education Kits product. For demand-side management (DSM) programs, the NTGR is a metric that estimates the influence of the program on the target market. It is used to adjust reported gross energy savings to account for energy efficiency that would occur in absence of a program, and it is also used as a benchmarking indicator of program effectiveness. NTGR results can indicate opportunities for Xcel Energy to adjust the design and implementation of its products to increase the cost-effectiveness of individual products and the entire portfolio. The NTGR includes several factors that create differences between gross and net savings, such as free ridership and spillover. The evaluation team developed the NTGR based on participating household survey responses (n=103) with qualitative and contextual input from the participating teacher survey and interview responses. To assess the plausibility of this NTGR, the evaluation team then compared it to the NTGRs of similar programs sponsored by other peer utilities. Note that, while an NTGR of 1.0 is often seen as desirable, it may not be appropriate for all program designs depending on a variety of factors (including the maturity of the product and the technologies it promotes, program intervention strategies, and cross-program coordination strategies). The evaluation team has taken care to present our NTGR results with this context in mind.

This chapter presents:

- **Key findings –** The key findings section presents the recommended NTGR based on the evaluation team's synthesis of findings from market actors and peer utilities.
- **Approach –** The approach section presents an overview of the evaluation team's methods for calculating the recommended NTGR.
- **Net-to-gross ratio inputs –** This section presents qualitative and quantitative data that support the NTGR calculations.

2.1 Key Findings: Net-to-Gross Ratio

Currently, Xcel Energy's School Education Kits product uses a deemed NTGR of 1.0, under the assumption that "the kits would not be available without the product." [6] The evaluation team recommends maintaining an NTGR of 1.0 for the School Education Kits product based on results from participating household survey responses that account for free-ridership (0.32) and spillover (0.35). As described below, the evaluation team estimated free-ridership and spillover—and subsequently the NTGR—based on participating household survey responses to questions regarding the influence that Xcel Energy and the School Education Kits product had on the households' decisions to install the energy efficiency measures in the kit and what actions their households would have taken with regards to installation of energy efficient equipment in their homes had their child not brought home the Take Action Kit.

[6] https://www.xcelenergy.com/staticfiles/xe-responsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/CO-Demand%20side%20management-2017%2018%20DSM%20PLAN_FINAL.pdf

While the evaluation team estimated free-ridership to be approximately 32%, the estimated spillover attributable to the School Education Kits product – estimated through household responses regarding the level of influence participating in the product had on their decisions to install additional energy efficiency equipment – was approximately 35%, resulting in the NTGR of 103% (1.03). The evaluation team computed an approximate 90% confidence interval based on the random error associated with the estimates of free-ridership and spillover, which ranged from 0.88 to 1.18 and includes the product's current NTGR of 1.0. The relatively high level of calculated spillover is consistent with other participant and teacher survey results that indicated a high level of product influence and engagement, especially among households that may have otherwise not engaged, purchased or installed energy efficiency equipment without receiving a Take Action Kit for free such as low-income households.

2.2 Approach

The purpose of the NTG analysis is to estimate the NTGR—the percent of savings reported for the School Education Kits product that can be attributed to the actions of the product, such as the educational materials provided to teachers and the measures in the kits given to the students. The NTGR is comprised of two estimated metrics: free-ridership and spillover, which are described below.[7] To develop estimates of these two metrics, the evaluation team used participant (parent) self-report survey results. The methodological approach was based on the Residential and Low Income Sector Protocols in the *Illinois Statewide Technical Reference Manual for Energy Efficiency Version 6.0* (in *Attachment A: Illinois Statewide Net-to-Gross Methodologies)*. The evaluation team customized this approach to better match the questions and algorithms to the Xcel Energy School Education Kits product and supplemented the approach with additional contextual input from the participating teacher survey and in-depth interview results.

The evaluation team calculated the NTGR using the formula:

$$NTGR = (1 - \text{free-ridership rate} + \text{participant spillover rate})$$

The NTGR algorithm draws from responses by parents of participating students to a battery of self-report questions designed to determine product-related free-ridership and spillover. These questions inquired about the parent's degree of awareness of the measures included in the Take Action Kits and whether such measures were installed in the home prior to their child bringing home the kit. The questions also targeted the level of influence various aspects of the product—such as the educational material, teacher and student encouragement, and contact with Xcel Energy—had on the households' decision to install the energy efficiency equipment included in the Take Action Kits. In addition, the survey instrument included questions to identify whether the School Education Kits product led to the purchase and installation of other energy efficiency measures (i.e., spillover).

Free-Ridership

The free-ridership estimate represents the percent of savings that would have occurred in absence of product intervention. Free-ridership is assessed on a scale from 0 to 1, where 1 indicates that the

[7] In some instances, the NTG ratio may also include a third metric, market effects. However, the evaluation team does not believe that the School Education Kits product includes measurable market effects.

product had 100% free-ridership and all product savings would have occurred without any of the product's rebates or assistance.

To determine free-ridership, the evaluation team started with the Residential and Low-Income Sector Protocol from the Illinois Technical Resource Manual (TRM) and adjusted the process to accurately estimate free-ridership for the unique structure of the School Education Kits product. In addition, the participant is the parent of the student who received the kit and may be only marginally knowledgeable about the kits.

The estimation of free-ridership included two primary factors:

1. A Product Influence score, based on the participant's perception of the level of influence various product components such as the educational material, teacher encouragement, child encouragement, and Xcel Energy in general had on their decision to install the Take Action Kit measures, focusing specifically on the LED lighting.
2. A No-Product score, based on the participant's response to the counterfactual question regarding what their household would have done had their child not brought home the Take Action Kit.

The Product Influence score was calculated using a Part 1 and Part 2 scoring algorithm based on survey responses to five individual questions. Part 1 consisted of the first four questions asking participants to estimate the level of influence across four primary product components using a scale of 0 to 10 where 0 was "not at all influential" and 10 was "extremely influential." The maximum score across the four product factors was used as Part 1 in the Product Influence scoring. These four product components included:

1. Educational material the child brought home;
2. Encouragement the household or child receive from their teacher;
3. Contact the household may have had with Xcel Energy; and
4. Encouragement from the child.

Part 2 of the Product Influence score consisted of household survey responses to the level of influence across all the product factors combined on the same 0 to 10 scale. The combined Product Influence score was then calculated using the average of the Part 1 and Part 2 scoring.

The No-Product score was estimated using the participant survey responses to the counterfactual question targeting what the households would have done in the absence of the product and applying a 0 to 10 scoring system similar to the Product Influence Score. Specifically, the evaluation team asked participants whether they would have purchased and installed about the same number of LED bulbs at about the same time (0), purchased and installed about the same number of LEDs within a year (3), purchased and installed about the same number of LEDs within one to two years (3), purchased and installed LED bulbs as existing bulbs burned out (7), or would not have purchased and installed any LED bulbs at that time or within the next couple of years (10).

The evaluation team then used the average score across the Product Influence and No-Product scores to estimate a final free-ridership value for each participating household.

Participant Spillover

The spillover metric represents additional savings achieved as a result of product activities, outside of rebated measure savings, by product participants. Such savings are not directly captured in the products's claimed energy savings. For the Xcel Energy School Education Kits product, the evaluation team incorporated two measure attribution scores for the spillover estimation. Each of these scores is computed from participating household responses to survey questions. Each question asked participants (parent of the student who received the kit) to choose a value on a scale from 0 to 10 where 0 indicates no influence and 10 indicates highest influence.

The first question (measure attribution score #1) asked about the influence the School Education Kits product had on the purchase of any additional energy efficiency measures the participant acquired subsequent to their student receiving the Take Action Kit. The survey instrument then iterated through each additional energy efficiency measure the participant reported purchasing.

The second question (measure attribution score #2) asked about likely actions the participant would have taken in the absence of product participation. Again, the survey instrument iterated through each additional energy efficiency measure the participant reported purchasing.

The spillover score was then computed using the formula shown below. A spillover score must be greater than five in order for the additional measure to qualify for spillover. When this criterion is met, the savings are added to product attributable savings.

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

The questions asked in the parent survey and the approach to analyzing the responses to the questions is heavily influenced by the self-report approach (SRA) specified in the 2016 Illinois Statewide Technical Reference Manual for Energy Efficiency[8] and draws on recommended survey questions specified therein. The SRA involves contacting a sample of participant decision-makers and asking them a series of closed- and open-ended questions about their actions and motivations related to installing energy efficiency equipment. The evaluation team modified certain aspects of this approach to account for the fact that participants receive the measures proactively from Xcel Energy, not by customer request.

2.3 Net-to-Gross Ratio Estimate and Inputs

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

Given that the Xcel Energy School Education Kits product previously used a deemed NTGR of 1.0 (similar to other peer utilities), the evaluation team did not have a previously calculated NTGR to compare the proposed 2018 NTGR estimate of 1.03. However, given the parameters of the product

[8] Specifically, we will be drawing from Version 6.0: Volume 4: Cross-Cutting Measures and Attachments: Attachment A.

design and contextualizing the qualitative findings from the teacher surveys and interviews, the evaluation team found that an NTGR slightly above 100% was appropriate for the School Education Kits product. As outlined below, the main driver of the high NTGR is the estimated 35% customer spillover that can be attributed to the School Education Kits product. This spillover is representative of the high level of influence both the educational material and Take Action Kit measures—as reported by both households and teachers —had on households' decisions to not only install the kit measures but also pursue other, larger (with regards to energy savings) energy efficiency projects.

Using the NTGR formula outlined above, the final NTGR calculation for the Xcel Energy School Education Kits product is shown below:

$$Product\ NTGR = 1 - (Free - ridership\ Ratio) + (Participant\ Spillover\ Ratio)$$

$$1.03 = 1 - (0.32) + (0.35)$$

Participant-Reported Free-Ridership Results

One of the primary goals of the impact portion of the School Education Kits product evaluation was to estimate the degree of participating household free-ridership. Estimating the free-ridership helps identify what percentage of the product savings may have occurred in the absence of the product because of household preferences to purchase energy efficient equipment. To accomplish this, the evaluation team asked participants how influential different aspects of the product were in their decision to install the energy efficient equipment included in the Take Action Kit (Product Influence Score). Households also evaluated what they would have done if the product did not exist and they did not receive the kit (No-Product Score).

Free-Ridership Based on Responses to Product Influence Questions

The first step in developing the free-ridership (and subsequently NTGR) for the School Education Kits product was to analyze the data collected from four questions that directly asked about product influence. Those questions, shown in Table 2-1, asked participants to estimate the level of influence across the four primary components of the School Education Kits product using a scale from 0 to 10, where 0 was "not at all influential" and 10 was "extremely influential." The maximum score across the four product factors was used as Part 1 in the Product Influence scoring. Table 2-1 also shows that for Part 2 of the Product Influence Score, the evaluation team asked participating households to evaluate the combined influence of the four product impacts that make up Part 1. Overall, households reported a high level of influence from the product educational materials (76%), encouragement from their child (84%), encouragement their child received from their teacher (76%) and the combined product influences (83%). Interactions with Xcel Energy had less influence on households, with only 32% indicating it was a high influence on their decision to install the kit equipment. This is due in part because Xcel Energy staff had little direct communication with participants.

Table 2-1. Participant Responses to Product Influence Questions

Product Influence Score Component	Question Number	Product Influence Questions	Low Influence	Medium Influence	High Influence
Part 1	Q27	How influential was the educational materials your child brought home in your decision to install the LED bulbs included in the kit your child brought home?	4%	20%	76%
	Q28	How influential was encouragement you or your child received from their teacher in your decision to install the LED bulbs included in the kit your child brought home?	5%	18%	78%
	Q29	How influential was any contact you have had with Xcel Energy in your decision to install the LED bulbs included in the kit your child brought home?	43%	25%	32%
	Q30	How influential was encouragement from your child in your decision to install the LED bulbs included in the kit your child brought home?	5%	12%	84%
Part 2	Q31	Thinking about all four of these potential influences together, how influential were they collectively on your decision to install the LED bulbs included in the kit your child brought home?	6%	11%	83%

Table 2-2 shows the median scores across both the Part 1 and Part 2 survey question components. Overall, all of the product influence components, including the combined effect, had high influence scores (over 75% high influence) with the exception of contact directly from Xcel Energy (32%). The structure of the product, where Xcel Energy does not directly communicate with the participating households, helps justify this low influence score. The combined Product Influence score was then calculated using the average of Part 1 and Part 2.

Table 2-2. Influence Factor Scores

Influence Factor	Median Score (0 – 10)
Educational material	8
Teacher encouragement	8
Contact with Xcel Energy	5
Child encouragement	9
Combined	8

In summary, the three steps for computing the final Product Influence Score are as follows:

$$Step\ 1\ -\ Max(Q27, Q28, Q29, Q30);\ Average\ of\ 0.85\ across\ respondents$$
$$Step\ 2\ -\ Response\ (Q31);\ Average\ of\ 0.78\ across\ respondents$$
$$Step\ 3\ -\ Mean\ (Step\ 1,\ Step\ 2)\text{: } Average\ of\ 0.81\ across\ respondents$$

Free-Ridership Based on Responses to Counterfactual Question

The second component of the free-ridership score calculation was the No-Product (counterfactual) score which used a similar scoring scale from 0 to 10. The evaluation team asked participants whether they would have purchased and installed about the same number of LED bulbs at about the same time (0), purchased and installed about the same number of LEDs within a year (3), purchased and installed about the same number of LEDs within one to two years (3), purchased and installed LED bulbs as existing bulbs burned out (7), or would not have purchased and installed any LED bulbs at that time or within the next couple of years (10). Overall, the average No-Product score was 0.56. Table 2-3 shows the results across the household participants.

Table 2-3. Participant Responses to Counterfactual Question

Without product, what would you have done?	Scoring (0-10)	%
Same amount of LEDs, same timing	0	9%
Same amount of LEDs, within the year	3	10%
Same amount of LEDS, within 1 to 2 years	3	18%
LEDs on burnout	7	43%
No LEDs in next couple years	10	19%

Combined Free-Ridership Scoring

Once the Product Influence and No-Product scores were computed individually, the evaluation team averaged the two scores for each participant to estimate a free-ridership score using the formula below. The individual free-ridership scores for households—weighted by the sampling strata—were then averaged to estimate a product free-ridership score. For the School Education Kits product, the estimated 2017 free-ridership score was 0.33, indicating that 33% of the product savings would have happened in the absence of the product.

$$Free - ridership\ =\ 1\ -\ Mean\ (Product\ influence\ score, No - Product\ score)$$
$$Free - ridership\ =\ 1\ -\ Mean\ (0.815, 0.561)$$
$$Free - ridership\ =\ 1 - 0.68$$
$$Free - ridership\ =\ 0.32$$

The evaluation team also looked at the free-ridership levels across the various school-type strata for the participating households. Table 2-4 shows that the free-ridership scores were relatively consistent across each of the strata, although the households with children in small schools with a medium to high percentage of students enrolled in a free lunch program appeared to be slightly

higher (0.41) compared to households with children in medium (0.28) and large (0.33) schools with the same percentage of free lunch students. Additionally, the estimated free-ridership score across all households with children in schools with a medium-to-high percentage of free lunch students was 0.32, while the average across households in private schools or schools with a low percentage of free lunch students was 0.33. However, given the relatively small sample sizes for each stratum, the free-ridership differences were not statistically significant.

Table 2-4. Free-Ridership Score by Strata

Strata	Free-Ridership Score
1. Any Size School with Low Free Lunch	0.37
2. Small Schools with Medium-to-High Free Lunch	0.41
3. Medium Schools with Medium-to-High Free Lunch	0.28
4. Large Schools with Medium-to-High Free Lunch	0.33
5. Private or Contract	0.29

Additional Web Survey and Interview Context

To help corroborate the free-ridership estimates, the evaluation team analyzed additional household survey results and the teacher survey and interview results. From the participating household survey, one of the interesting findings was that 71% of households had LEDs installed prior to receiving the Take Action Kit. However, households still indicated a high level of product influence through both the Product Influence Score and the No-Product Score. This finding seems to highlight that the product was still influential on households' decisions to install additional energy efficient equipment in their homes despite already being aware of the equipment.

Additionally, interviewed teachers indicated that they perceived the product to have a large influence on households as well. For example, using the same 0 to 10 scale as the household survey, interviewed teachers had an average influence score for the educational material of 8 and a teacher influence score of 9, with 84% saying that a majority of their students' households would not have purchased additional LEDs without the product or would have only purchased upon burnout of their existing bulbs.

Spillover Results

The evaluation team estimated spillover based on a comprehensive set of questions asked of participating households regarding other energy efficiency measures customers installed after participating in the School Education Kits product. If a customer did install another energy efficiency measure, the energy savings from that measure was regarded as spillover to the School Education Kits product if the following two conditions were met:

1. The customer did not receive a rebate from Xcel Energy or any other organization; and
2. The customer reported that participation in the School Education Kit product had an influence of 3 or higher on a scale of 1 to 10.

For those participants of the School Education Kits product that met these two conditions, the evaluation team computed spillover as follows:

$$Spillover = \frac{(Influence\ score \times Number\ installed \times Deemed\ Savings)}{Savings\ from\ High\ Efficiency\ Kit\ Measures}$$

The evaluation team also analyzed the estimated spillover by additional "in-kit" spillover and additional "out-of-kit" spillover. The "in-kit" spillover was defined as additional purchases of measures that were already included in the Take Action Kit such as, faucet aerators and energy-efficient showerheads. The "in-kit" spillover analysis excluded any additional purchases of LEDs, as the evaluation team used a conservative assumption that residential LED purchases and savings were captured through the existing midstream residential lighting product. The "out-of-kit" spillover included all other additional measures that were not included in the Take Action Kit purchased by participating households after participating in the School Education Kits product. Of the total calculated spillover (0.35), approximately 91% was attributable to the "out-of-kit" spillover measures (0.32), while only 9% was attributable to "in-kit" spillover measures.

3. PROCESS EVALUATION

In addition to calculating a recommended NTGR, the evaluation team conducted a process evaluation to determine whether Xcel Energy can optimize the design and delivery of the School Education Kits product to its customers. Specific research questions of the process evaluation are listed in the bullets below:

- What are the backgrounds for participating teachers, including experience, primary subjects they teach, and their existing views on energy efficiency?
- How well does the educational curriculum material in the Take Action Kits mesh with the existing energy curriculum and how do teachers incorporate the material into lesson plans?
- What parts of the product do students engage with the most and how can the material be improved to better fit the needs of households?
- What aspects of the Take Action Kits are households installing most frequently and what measures are most useful for households?
- How satisfied are teachers and parents with the product and what suggestions—including adjustments to the curriculum and/or the measures included in the kit—do both parties have for improving the product going forward?
- How familiar are parents with the energy efficiency measures included in the kits and to what extent were these measures installed in the home prior to receiving the kit?[9]
- How has their experience with the kits, the educational materials provided to their child, and their child's experience with the classroom and related activities influenced them to install additional energy efficiency measures in their home?

To accomplish these objectives, the evaluation team elicited feedback from Xcel Energy School Education Kits product staff, participating teachers (through a web survey and in-depth interviews), participating households that received a kit, and product managers from utilities with similar programs. This chapter presents key findings from the process evaluation, the evaluation team's approach to conducting the process evaluation, and specific findings relating to each evaluation objective. These findings, along with findings from the impact evaluation, inform the conclusions and recommendations presented in the next chapter. Table 3-1 outlines how the process evaluation objectives are presented throughout Sections 3.3—Sections 3.10.

Table 3-1. Process Evaluation Objectives by Report Sections

Report Section	Section Title	Evaluation Objective
3.3	Installation Rates and Measure Persistence	- To find out how many households are installing kit measures - To find out how many households keep the kit measures installed - Identify why households are uninstalling kit measures
3.4	Teacher Background	- To identify what types of teachers (experience level, school type, subject expertise, etc.) are participating in the product - To identify how many years teachers have been participating in the product
3.5	Household Participant Background	- To identify what types of homes participating households live in - To determine household familiarity with energy-efficiency measures prior to receiving the Take Action Kit
3.6	Teacher Enrollment Process	- To find out how teachers first learned about the product - To find out what the most important reasons were for teachers to participate in the product
3.7	Educational Curriculum	- To identify how energy-efficiency content was taught by participating teachers prior to participating in the product - To identify how well the product educational material fit with existing Colorado state-wide energy curriculum - To identify how long teachers utilized the educational material in their classrooms
3.8	Product Engagement	- How well did students understand the material included in the Take Action Kit? - How engaged were students with various parts of the product?
3.9	Teacher and Household Satisfaction and Benefits	- To identify how satisfied both households and teachers are with the product - To identify the key benefits that households and teachers receive for participating in the product - To identify key recommendations households and teachers have for improving the product
3.10	Peer Utility Program Comparison	- To assess how the School Education Kit product compares to similar programs at peer utilities

Below, Sections 3.3 through 3.10 provide the findings across the process evaluation topics. The participating household and teacher survey results are weighted by the school size and percentage of students enrolled in a free lunch program outlined in Section 3.2. The evaluation team analyzed the

teacher and parent web survey results across the strata to identify any potential key differences between different school types among participants. Statistically significant differences are highlighted in the subsequent sections. The synthesis of findings places an emphasis on helping Xcel Energy interpret both household and teacher perspectives on the School Education Kits product and identify actionable opportunities for improving product implementation strategies moving forward.

3.1 Key Findings

The key findings identified by the evaluation team across the process evaluation research tasks helped contextualize the effectiveness of the School Education Kits product and highlight strategies for improving the product going forward. The key findings of the evaluation teams analysis of all of the information and data collected through the process evaluation are as follows:

Households participating in the School Education Kits product reported a high level of satisfaction with all aspects of the product, including the product overall (96% "very" or "extremely" satisfied) and the LEDs (97%). Additionally, 93% of households said they have observed at least some benefits since participating in the product including an increase in overall awareness regarding energy efficiency (57%), increasing their households' energy saving activities (33%), and learning about new energy efficiency products (32%). Approximately half (52%) said they have increased the number of conversations about energy efficiency in their household since participating. While almost all of the participating households are installing the LEDs (98%), a lower percentage of households reported installing the other energy efficiency kit measures than what was estimated by the product based on the Home Energy Worksheets. The evaluation team estimated that approximately half of households that initially said they "will install" certain measures on the Home Energy Worksheet actually ended up installing the kit measures.

Like participating households, teachers also reported a very high level of satisfaction with all aspects of the product, with 87% of teachers saying they were "very" or "extremely" satisfied with all aspects including the product overall, the educational materials, the enrollment process, and the incentives. Over 50% of teachers that participated in the product had at least ten years of teaching experience, along with 84% of interviewed teachers who added that they have participated in the product for at least three years. 88% of teachers added that energy efficiency and reducing their own individual energy usage is something that is important to them.

The evaluation team also found that there were some notable differences in teachers across the various strata with regards to why they chose to enroll in the product and how engaged their students are. For example, 29% of teachers in schools with a low percentage of students enrolled in a free lunch program said their primary reason for enrolling was because of the opportunity to teach about energy efficiency, compared to only 12% of teachers with a high percentage of students enrolled in a free lunch program. Conversely, while 29% of teachers in schools with a high percentage of students on free lunch said being able to provide the equipment to their students was the primary reason for enrolling, none of the teachers in schools with a low percentage of free lunch students indicated that was their primary reason. Teachers in larger schools and schools with a higher percentage of students enrolled in a free lunch program also reported a higher percentage of student engagement with various aspects of the product than teachers in smaller schools and schools with a low percentage of students on free lunch.

3.2 Approach

To accomplish the evaluation objectives for the School Education Kits product, the evaluation team completed a suite of intersecting and complementary research activities in 2018. Detailed information on the sampling approach used for the research can be accessed in Appendix A.2. The following discussion highlights the research topic coverage contributed by each research activity: the staff interviews, participating household web surveys, teacher web surveys, teacher in-depth interviews, and benchmarking interviews.

Table 3-2 below highlights the evaluation objectives, points to where in Chapter 3 they are discussed, and reveals the extent to which each individual research task was constructed to inform each objective.

Table 3-2. Evaluation Objective by Research Task

Report Section	Evaluation Objective	Staff Interviews (n=2/2)	Teacher Web Surveys (n=153/150)	Household Web Surveys (n=109/100)	Teacher Interviews (n=13/12)	Peer Utility Interviews (n=4/6)
3.3	Installation Rates and Measure Persistence		✔	✔	✔	
3.4	Teacher Background			✔		✔
3.5	Household Participant Background			✔		
3.6	Teacher Enrollment Process	✔	✔		✔	
3.7	Educational Curriculum		✔		✔	
3.8	Product Engagement		✔	✔	✔	
3.9	Teacher and Household Satisfaction and Benefits		✔	✔	✔	

Staff Interviews

The evaluation team conducted in-depth interviews of Xcel Energy personnel involved with the School Education Kits product early in the course of this evaluation. The staff interviews covered the following topics:

- Assess how the various product roles and responsibilities are distributed between Xcel Energy staff and supplementary product implementation staff;
- Identify how the School Education Kits product is implemented and delivered to participating teachers;
- Identify product savings and participation targets and assess how well the product is achieving these goals;
- Identify how Xcel Energy and support staff are marketing the School Education Kits product to prospective teachers and households;
- Assess how the product tracks participation data and verifies key metrics such as installation rates; and
- Identify any initial plans for product changes over the next year

Appendix B.5 presents the interview guide used for these discussions.

Participating Teacher Web Surveys

The evaluation team conducted a web survey with participating teachers using customer records from Xcel Energy for the sample frames. The web survey was administered through Qualtrics, and prospective teacher participants were contacted in batches via an email invitation followed by a reminder email approximately two days after the initial invitation. The evaluation plan used for this project can be found in Appendix A.1. The sample size for the teacher web survey was set at levels adequate to provide a 90% level of confidence with a minimum of +/- 10% relative precision. The evaluation team completed 153 web surveys with an initial target of 150.

For the purposes of this evaluation, a participating teacher was defined as any teacher that participated in the School Education Kits product in 2017. Additionally, the evaluation team stratified participating teachers by the school type they currently teach in. This school-type stratification included the relative size of the school (small, medium, large, private) and the percentage of students on free or reduced lunch. Table 3-3 below details how the school size and percentage of students on free lunch variables are defined along with the number of teachers in the sample within each stratum.

Table 3-3. Participating Teacher Strata

Strata	Number of Students	% Enrolled in a Free Lunch Program	# of Teachers in 2017 Sample	% of Teachers in 2017 Sample
1. Small School With Low Free Lunch	Up to 355	Up to 15%	24	2%
2. Small School With Med Free Lunch	Up to 355	16 – 79%	93	7%
3. Small School With High Free Lunch	Up to 355	80 – 100%	61	4%
4. Med School With Low Free Lunch	356 – 606	Up to 15%	147	11%
5. Med School With Med Free Lunch	356 – 606	16 – 79%	372	27%
6. Med School With High Free Lunch	356 – 606	80 – 100%	81	6%
7. Lg School With Low Free Lunch	607 or more	Up to 15%	87	6%
8. Lg School With Med Free Lunch	607 or more	16 – 79%	176	13%
9. Lg School With High Free Lunch	607 or more	80 – 100%	47	3%
99. Private or Contract[10]	-	-	276	20%

In addition, the participating teacher survey was also designed to address the following:

- Identify the background characteristics of participating teachers including experience, primary subjects they teach and their existing views on energy efficiency;
- Assess how well the educational curriculum material in the Take Action Kits meshes with existing energy curriculum and standards in Colorado;
- Assess how well participating teachers incorporate the educational material into their lesson plans and how long they spend with various lesson plans;
- Identify what parts of the product students engage most with and how the material can be improved to better fit households' needs;
- Verify the installation rates of the Take Action Kit measures and identify which measures are most useful to households;
- Assess the level of satisfaction among participating teachers; and
- Identify teacher recommendations for improving the School Education Kits product.

The participating teacher survey is presented in Appendix B.2.

Participating Household Web Surveys

The evaluation team also conducted a web survey with participating households that had a child who received a Take Action Kit as part of the School Education Kits product. The web survey was administered through Qualtrics, and prospective household participants were contacted in batches via an email invitation followed by a reminder email approximately two days after the initial invitation. The sample size for the participating household web survey was set at levels adequate to provide a 90% level of confidence with a minimum of +/- 10% relative precision. The evaluation team completed 109 web surveys with an initial target of 100.

[10] School size and percentage of students on free lunch data are not available for private schools.

For the purposes of this evaluation, a participating household was defined as any household that had at least one child receive a Take Action Kit as part of the School Education Kits product in 2017. The evaluation team constructed a randomized sample of participating households that received a Take Action Kit in 2017.

The participating teacher survey is presented in Appendix B.1.

Teacher In-depth Interviews

The evaluation team conducted follow-up in-depth interviews with a sample of teachers that completed the online web survey. The interviews were designed to probe on similar topics to the web survey in more detail, following up on specific responses the teachers provided during the web survey process. The interviews were conducted after the web survey implementation was completed and the evaluation team contacted a randomized sample of teachers that completed the web survey. The evaluation team completed a total of 13 in-depth interviews with an initial target of 12.

Data collected in the teacher follow-up interviews included:

- Product experience including the number of years they had participated in the product, plans to participate going forward, and their overall perceptions of the importance of the product;
- Follow up information on the usefulness and appropriateness of the educational material provided as part of the product;
- Perceived influence level of the product factors on households' decisions to install the energy efficient equipment in the Take Action Kit; and
- Overall satisfaction with the product and potential recommendations for improving the product going forward.

Appendix B.3 presents the interview guides used for the follow up teacher interviews.

Benchmarking Interviews

The evaluation team examined six peer utilities to benchmark the Xcel Energy School Education Kits product against others in the industry, assessing product design and delivery and key performance indicators (e.g., participation levels, free-ridership). The evaluation team conducted in-depth interviews with product managers to address the following topics:

- Product design and implementation strategies;
- Kit efficiency measures and savings processes;
- Free-ridership and NTG methods and values;
- Teacher and household participation; and
- Overall product successes, challenges, and ongoing changes.

The evaluation team was able to complete four interviews with product managers with an initial target of six. Two other product managers initially agreed to interviews but subsequently were unable to participate because of a lack of availability. In lieu of the interviews, the evaluation team

conducted secondary research on the peer utilities using available information on program websites and recent annual reports.

Appendix B.4 contains the interview guide used for the utility benchmarking interviews.

3.3 Installation Rates and Measure Persistence

As discussed in Section 1.1, the School Education Kits product staff tracks installation rates through the student worksheets that accompany the Take Action Kits. For the 2017 product year, students that returned the Home Energy Worksheet reported a high level of installation for the majority of measures included in the Take Action Kits. For example, over 90% of responding students reported they had already installed or were planning to install the 9W and 11W LED bulbs and the LED nightlight. Installation rates for 2017 were greater than the rates reported in previous product years due to the replacement of CFLs with LED bulbs and because the 2017 product year accounted for households that were planning to install the kit measures in the near future.

The evaluation team asked participating households to confirm which measures they have actually installed in their home to compare the results to the Home Energy Worksheet estimates. As shown in Table 3-4, the web survey results helped corroborate the high level of installation for kit LEDs but indicated installation rates for the other energy efficiency measures were lower than initially recorded through the Home Energy Worksheets. Specifically, energy efficient showerheads had an installation rate of 73% in the Home Energy Worksheet compared to only 56% in the web survey findings. The survey results produced similar findings for the bathroom faucet aerators (69% vs. 42%) and kitchen faucet aerators (66% vs. 41%).

Table 3-4. Installation Rate Comparison Between Home Energy Worksheets and Participant Web Survey

Kit Measure	Home Energy Worksheet	Participant Web Survey
LEDs	93%	98%
Energy efficient showerhead	73%	56%
Bathroom aerator	69%	42%
Kitchen aerator	66%	41%

These results appear to show that while a vast majority of households that reported "had already installed" on the Home Energy Worksheet did install the measures, only a portion of the households that said they "will install" actually ended up doing so for the kitchen aerators, bathroom aerators and energy efficient showerheads. To confirm these assumptions, the evaluation team compared individual household web survey responses regarding the gas measure installations with their initial responses on the Home Energy Worksheet. Using this approach across the aerators and showerheads, approximately 41% of households that said they "will install" the measures in the Home Energy Worksheet reported actually having the measures installed in the web survey.

The evaluation team also asked participating households why they chose to not install the Take Action Kit measures. For households that did not install the energy efficient showerheads or the bathroom faucet aerators, the most common reason for not installing them was that their household already had energy efficient equipment installed (47% and 36%). For households that did not install the kitchen faucet aerators, the most common reason was because it did not fit properly on their current sink. Table 3-5 shows the percentage of households that provided the following reasons for not installing the measures.

Table 3-5. Household Reason For Not Installing Kit Measures

Kit Measure	Energy Efficient Showerhead	Kitchen Faucet Aerator	Bathroom Faucet Aerator
Already had energy efficient equipment installed	47%	27%	36%
Did not fit properly	6%	37%	29%
Preferred current equipment	26%	22%	13%
Too difficult/Did not have time to install	2%	12%	11%
Other	0%	10%	8%
Did not include preferred features	17%	0%	0%
Did not like the style/looks/quality	4%	0%	2%
Gave equipment to another household	4%	0%	0%

Of the households that did install the kit measures, the vast majority of them have kept the measures installed. As shown in Table 3-6 all of the kit measures had removal rates below 15%, with over 90% of households keeping the equipment installed for all of the kit measures with the exception of the kitchen aerators. For the small percentage of households that did remove the equipment after initially installing it, the evaluation team asked what their top reason for removing the equipment was.

Table 3-6. Percentage of Households That Removed Kit Measures and Top Reasons for Removing

Kit Measure	% of Households that Kept Measures Installed	Top Reason for Removing
Energy efficient showerhead	98%	Water pressure too low
Bathroom aerator	95%	Broke/did not fit well
LEDs	93%	Did not fit in fixture well
Kitchen aerator	86%	Water pressure too low

3.4 Teacher Background

The evaluation team assessed the types of teachers participating in the School Education Kits product by identifying the types of schools they taught in—with regards to relative size and the percentage of students enrolled in a free lunch program—along with the educational teaching experience and individual preferences for energy efficiency. Information from the teacher web survey and teacher interviews—along with background research on the participating schools—informed these findings. Table 3-7 below shows that nearly half (48%) of teacher participants taught in medium sized schools (356 – 606 students), relatively consistent with the percentage of teachers in the product population (44%). Additionally, relatively few teachers taught in private schools (8%) at the time of the evaluation, while large and small schools were equally represented among participating teachers (22%).

Table 3-7. Size of School for Participating Teachers

Size of School	% of Participants	% of Teachers in Product Population
Small	22%	13%
Medium	48%	44%
Large	22%	23%
Private	8%	20%

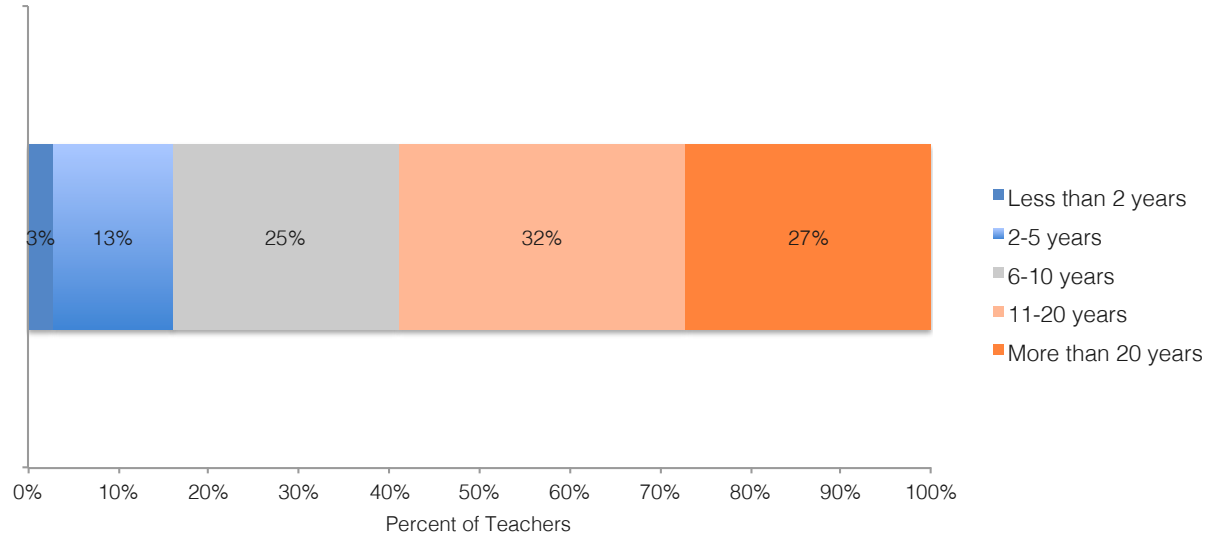
Additionally, Table 3-8 shows that 44% of participating teachers taught in schools with a medium percentage of students on free lunch (16%–79%), with 25% teaching in schools with a low percentage of students on free lunch (0%–15%) and 22% teaching in schools with a high percentage (80%–100%) of students on free lunch. The evaluation team also asked teachers to characterize their schools as rural, urban, or suburban. Over half (58%) characterized their school as suburban, compared to 27% that characterized their school as urban and 15% that said rural.

Table 3-8. Percentage of Students Enrolled in a Free Lunch Program

% of Students on Free Lunch	% of Participants	% of Teachers in Product Population
Low	25%	19%
Medium	44%	47%
High	22%	14%
Private	8%	20%

The teacher web survey and subsequent follow-up interviews also probed on the experience level of participating teachers and their overall level of interest in energy efficiency. Overall, as shown in Figure 3-1, over 50% of participating teachers had ten or more years of experience teaching, while only 3% had two or fewer years of experience. This is consistent with findings from the in-depth interviews in which multiple teachers expressed that participating in the product is significantly easier for experienced teachers because they have a better understanding of how to incorporate the educational material into their lesson plans and time out the implementation of all the material.

Figure 3-1. Participating Teacher Experience

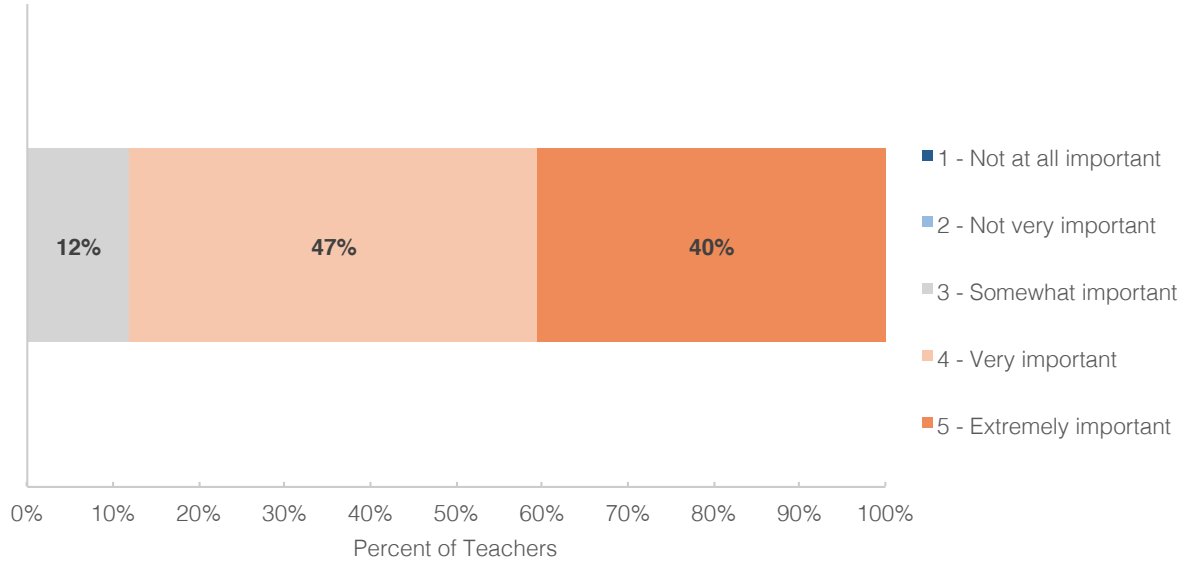


The evaluation team also asked interviewed teachers about their experience participating in the School Education Kits product. Eighty five percent (n=11) of interviewed teachers said they have participated in the product three or more years and 100% indicated they intend to continue participating going forward. Furthermore, 69% (n=9) said they have already recruited additional colleagues to participate in the product, with the remaining four indicating the only reason they had not recruited colleagues was because they were all already participating.

Participating teachers also indicated that while the School Education Kits product is typically administered as part of the science curriculum, because it targets fifth and sixth grade teachers, the participating teachers typically had experience teaching all standard subjects including math, English, and social studies.

Because teachers proactively register their class for participation in the School Education Kits product, the evaluation team's assumption was that participating teachers would value energy efficiency and prioritize reducing their own individual energy consumption. As expected, Figure 3-2 shows that 87% of participating teachers said that energy efficiency and reducing energy consumption was "very" or "extremely" important to them. Less than 1% of participating teachers said energy efficiency was "not very" or "not at all" important. There were no statistically significant differences between strata; however, 79% of participants in small schools reported energy efficiency and reducing their own consumption as being "extremely" or "very" important compared to over 92% of participants in large schools.

Figure 3-2. Importance of Energy Efficiency to Participating Teachers



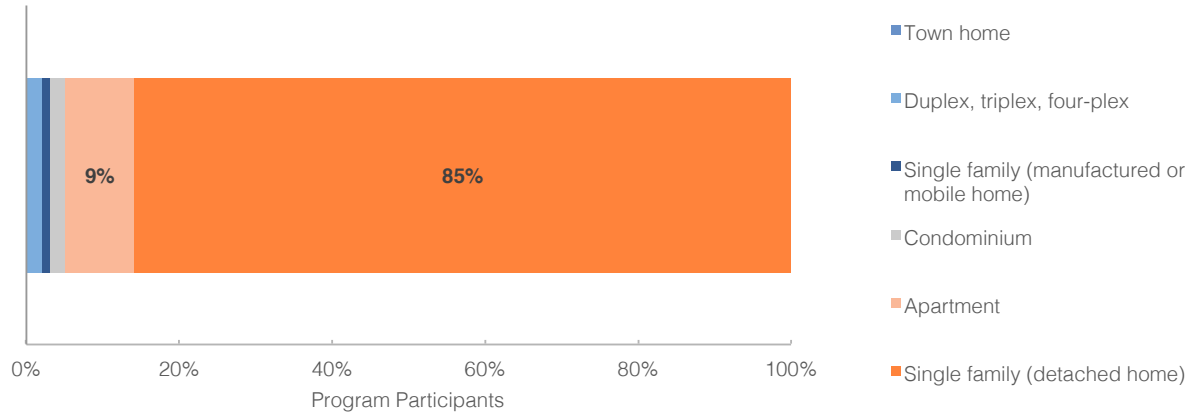
3.5 Household Participant Background

The evaluation team utilized the participant household web survey to help characterize the types of households that received a Take Action Kit as part of the School Education Kits product. This analysis included identifying the types of houses, details on home ownership versus renting, and the household background knowledge of energy efficiency and utility programs.

Figure 3-3 shows the distribution of participants by home type, the majority of which live in a single-family, detached home (85%). Relatively few participants currently reside in an apartment (9%), and only 1% of participants live in a single family, manufactured, or mobile home. Additionally, 72% of participating households owned their home, slightly more than the average for Colorado in 2017 (64%).[11]

[11] https://www.census.gov/quickfacts/co

Figure 3-3. Participant Household Home Type



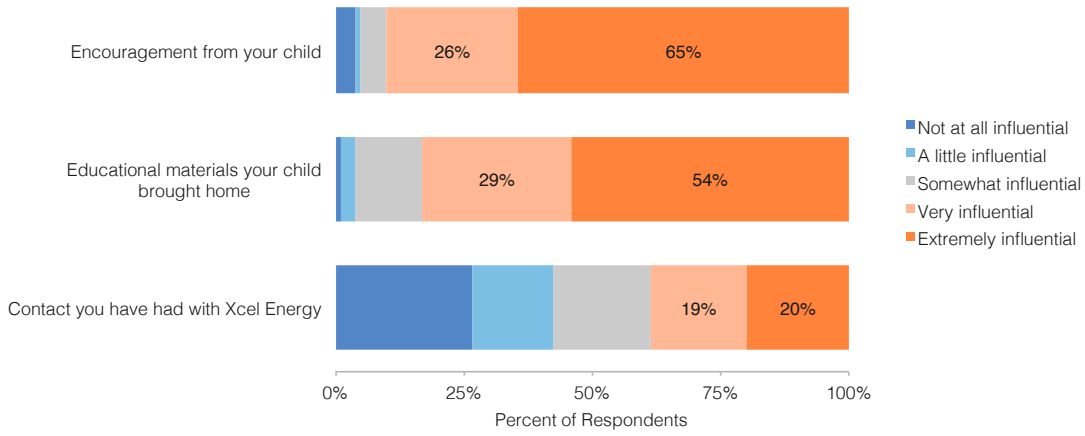
Most participants of the School Education Kits product also had relatively large households. Nearly half of participants reported having five or more full-time residents living in their home (49%). The next most often-cited household sizes were a four-person household at 39% and a three-person household at 9%.

Households that participated in the School Education Kits product typically did not have experience with other utility programs prior to participation. Specifically, only 20% of households recalled receiving a rebate from Xcel Energy for a different energy efficiency upgrade prior to receiving a Take Action Kit. Of those 20% that had received rebates, the most common types of rebates included furnace (n=6), insulation (n=3), lighting (n=2), or thermostat (n=2) upgrades, or another household appliance upgrades (n=7).

As discussed in Section 3.3 above, the vast majority of participating households installed the LEDs included in the Take Action Kit. Despite these high installation rates, 70% of households also reported that they already had LEDs installed in their homes prior to receiving the Take Action Kit, 86% of which had three or more installed.

The evaluation team asked participants about the influence that various aspects of the product had on their decision to install the LED light bulbs that were included as part of the kit. Encouragement from their child was the largest influencer in their decision to install the LEDs, with 91% of participants reporting it as very or extremely influential. The educational materials brought home by the child was also a large influencer, with 83% reporting it as being very or extremely influential. While not all participants dealt directly with Xcel Energy staff, 43% of those that did responded that they were a little or not at all influential in their decision to install the LEDs that were part of the kit. Figure 3-4 shows a detailed breakdown of how influential the School Education Kit product factors were on the participating households.

Figure 3-4. Household Influences on Kit LED Installations



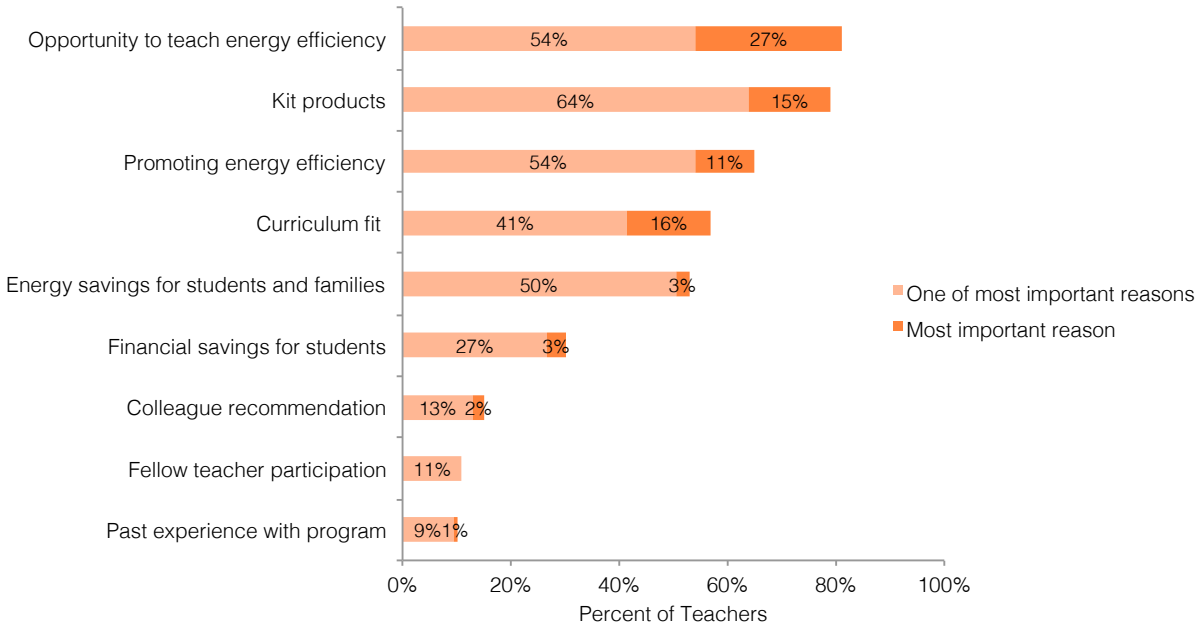
3.6 Teacher Enrollment Process

Xcel Energy staff and the third-party implementer target teacher enrollment during the fall and spring semesters with email communication and product awareness drives. Interested teachers can either contact product staff directly or choose to enroll online. The evaluation team asked participating teachers about the overall enrollment process for the product to help identify how teachers are learning about the product currently and how the enrollment process could continue to improve going forward.

While there were a number of ways participating teachers first heard about the School Education Kits product, the most often-cited way was through a referral from another teacher or administrator (47%). Other methods included email outreach (32%) and mailing inserts (12%), and from Xcel Energy directly via a phone call or through its website (6%). Interviewed teachers also added that referrals and mailings work best for receiving information about Xcel Energy product updates, while emails typically are less effective because of how many they receive during the school year.

To better understand why teachers were enrolling in the product, the evaluation team asked what reasons teachers found to be most important for participating in the product. As shown in Figure 3-5 below, over half of teacher participants said the kit products themselves (81%), the opportunity to teach students about energy efficiency (79%), promoting energy efficiency (65%), the educational curriculum (57%), and the energy savings for families (53%) were either the most important or one of the most important reasons for enrolling in the product. Additionally, 27% of teachers said that getting the opportunity to teach their students about energy efficiency was the "most important reason" for enrolling, followed by 15% who said the kit products were the most important reasons. Only a small portion (10%) of participants reported past experience with the product or fellow teacher participation as being either the most important or one of the most important reasons for enrolling in the product.

Figure 3-5. Reasons for Teacher Enrollment in Product



Additionally, as shown in Table 3-9, being able to provide their students with the energy efficient kit measures was an especially important reason for enrollment among teachers with a high percentage of students enrolled in a free lunch program. Specifically, 29% of teachers with a high percentage of students on free lunch said being able to provide the kit measures to students was the most important reason for enrolling compared to none of the teachers with a low percentage of free lunch students. Conversely, 29% of those teachers with a low percentage of students on free lunch said the opportunity to teach about energy efficiency was the most important reason for enrolling in the product compared to only 12% of teachers with a high percentage of students on free lunch.

Table 3-9. Reasons for Participating: Discrepancies Between School Types

	% That Ranked as Number One Reason	
Amount of Students on Free Lunch	Opportunity to Teach Students About Efficiency	Providing Students with Kit Measures
Low	29%	0%
High	12%	29%

3.7 Educational Curriculum

In addition to providing households with free energy efficiency kits, the School Education Kits product is also designed to provide participating teachers educational resources to help teach their students about energy efficiency. This section outlines the results from the teacher web survey and assesses the effectiveness of the educational curriculum, focusing on the following components:

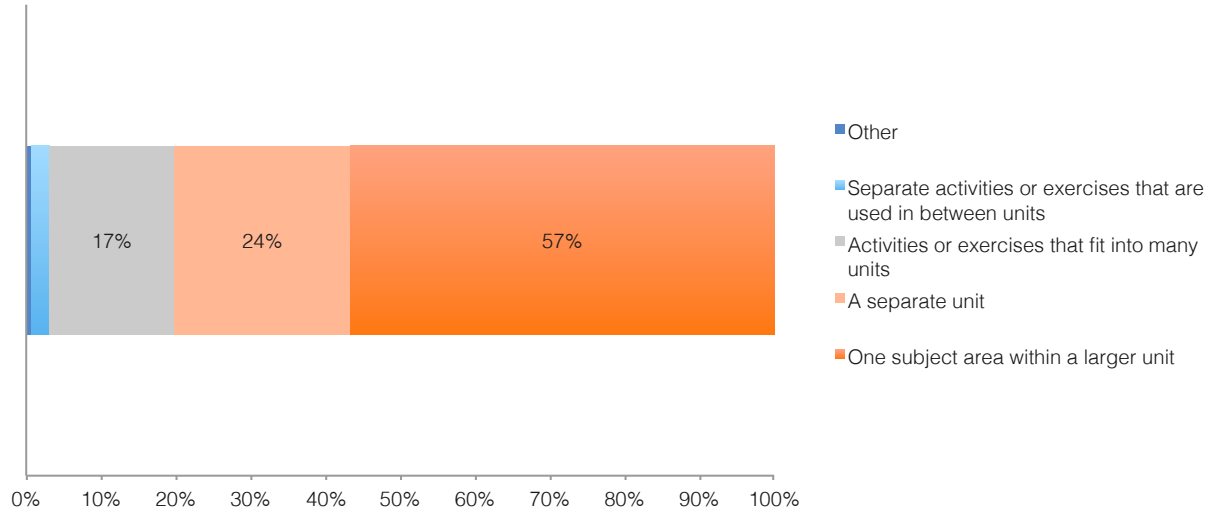
- Previous efforts for teaching energy efficiency topics;

- Identifying how the Xcel Energy material fits in with the existing curriculum and Colorado standards;
- Identifying which lesson plans teachers are prioritizing and how long teachers are spending on the educational material; and
- Identifying how well students are understanding the educational material.

The evaluation team began by asking teachers whether energy conservation content was included in their lesson plans prior to participating in the Xcel Energy School Education Kits product. Over half (55%) of teachers included energy conservation content in their lesson plans prior to participating in the product, 38% did not include energy conservation content at all, and 7% could not recall.

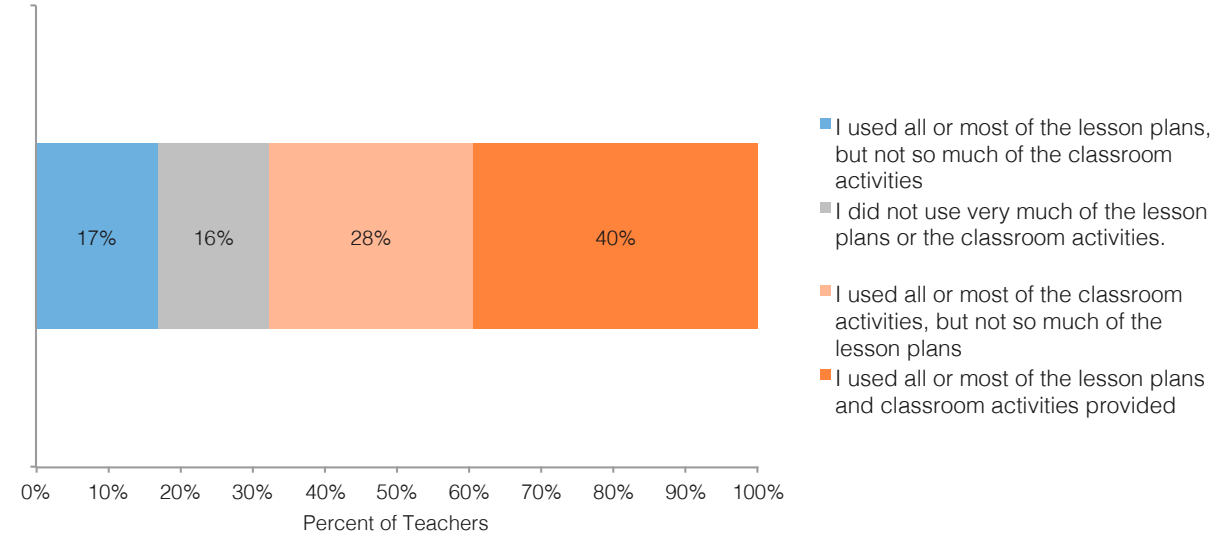
For those teachers who indicated that they had existing energy conservation content in their curriculum prior to participating in the product, the evaluation team asked how it was integrated into their broader science curriculum. As shown in Figure 3-6 below, 57% of teachers reported that it fit in one subject area within a larger unit, 24% reported that energy conservation was taught in its own unit, and 2% use separate activities or exercises that are used in between units or as a break from the main unit.

Figure 3-6. How Teachers Use Product Lesson Plans



With the new educational material provided as part of the School Education Kits product, the evaluation team asked teachers what lesson plans and activities are being used in the classroom, to get a better understanding of how their educational practices have been influenced by the product. Figure 3-7 shows that about 40% of participants reported that they use all or most of the lesson plans and classroom activities provided as part of the product, while 28% of participants use all or most of the classroom activities, but not as much of the lesson plans. Relatively few participants (16%) do not use very much of the lesson plans or classroom activities. Additionally, 65% of participants used more than one lesson plan provided as part of the product. A small portion of participants (8%) used all of the lesson plans, and 27% reported using only one lesson plan in their curriculum.

Figure 3-7. How Teachers Utilized Lesson Plans and Classroom Activities



The evaluation team followed up with teachers who said they did not use all of the lesson plans, to better understand which lesson plans they chose not to use and their rationale for not using those particular lesson plans. Figure 3-8 shows the distribution of lesson plans that were not used by teachers in their curriculum. The least commonly used lesson plan was electricity and circuits (83%), followed by energy transformation (54%). Relatively few participants did not use lesson plans on energy efficiency (28%) and natural resources (28%). Figure 3-9 below shows the reasons given for not using certain lesson plans that were provided as part of the product. The reasons included that there was not enough time to teach the material, they had other materials to teach, and it did not align with school standards and/or the curriculum.

Figure 3-8. Lesson Plans Unused By Teachers

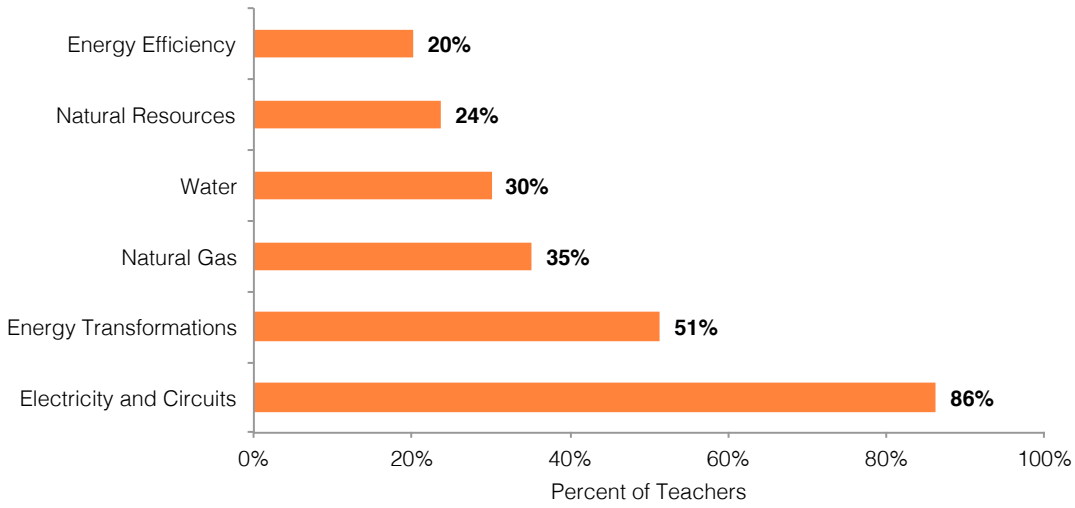
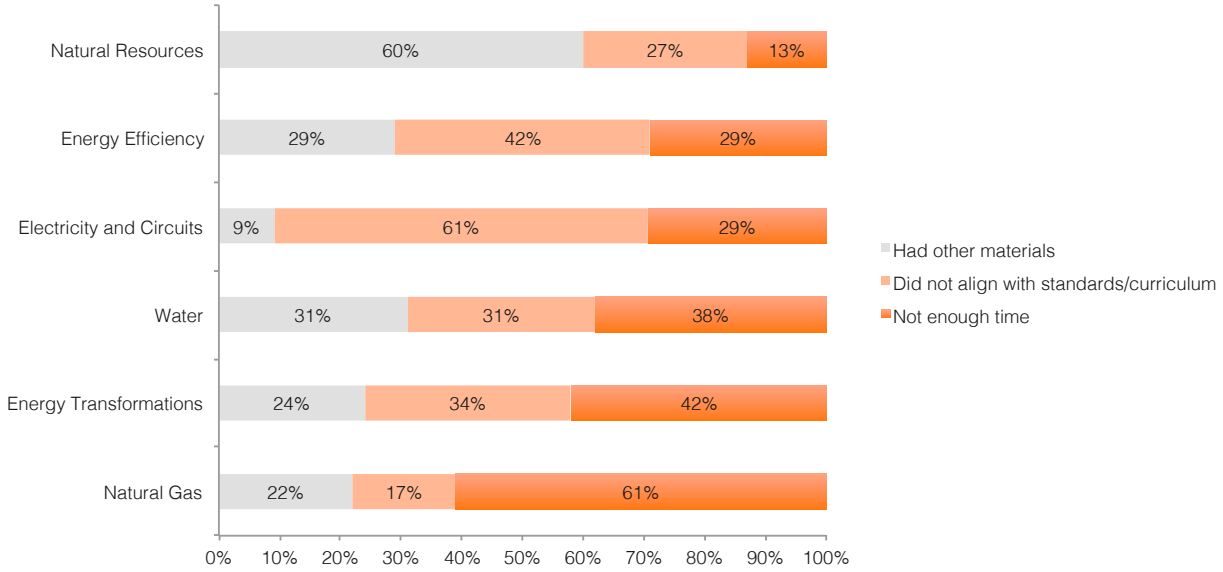


Figure 3-9. Teacher Reasons for Not Using Lesson Plans



Despite the majority of teachers electing to not use all of the lesson plans, 80% of teachers said that overall, the material fit the curriculum very or extremely well. However, interviewed teachers added that the more experience teachers have in the classroom and with the product, the easier it is to integrate multiple lesson plans. As one participant mentioned;

> *"Newer teachers straight up do not have time to learn how to integrate new material into existing curriculum. Some of [the lesson plans] just didn't fit with our curriculum."*

Participating teachers also provided insight on how long they spent implementing the educational curriculum including in the product. As shown in Table 3-10, 37% of participants spent one to three days teaching the Xcel Energy product curriculum and completing the classroom activities, while an additional 50% spend four to ten days. A relatively small portion of participating teachers spent less than one day (3%) or more than two weeks (8%) on the curriculum and classroom activities. There were no statistically significant differences between the time spent on curriculum material and school size or the portion of students on a free or reduced-cost lunch program.

Table 3-10. Time Spent With Product Educational Curriculum

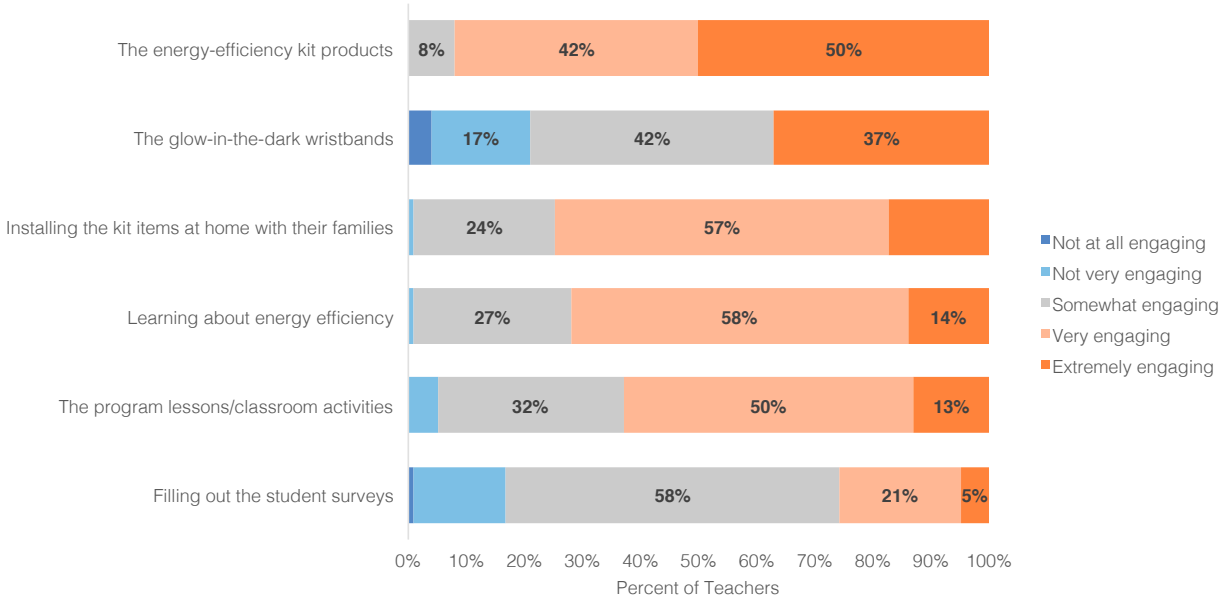
Time Spent with Curriculum	% of Teachers
Less than one day	3%
One to three days	37%
Four to five days	20%
Five to ten days	30%
More than two weeks	8%
Don't recall	3%

The evaluation team also asked teachers how well students were able to understand and learn from the education material provided as part of the product. Overall, the majority of teachers said their students understood the material provided as part of the product (92%). Teachers also said students were engaged with the lesson plans (90%), and students were able to learn well from the materials provided (92%).

3.8 Product Engagement

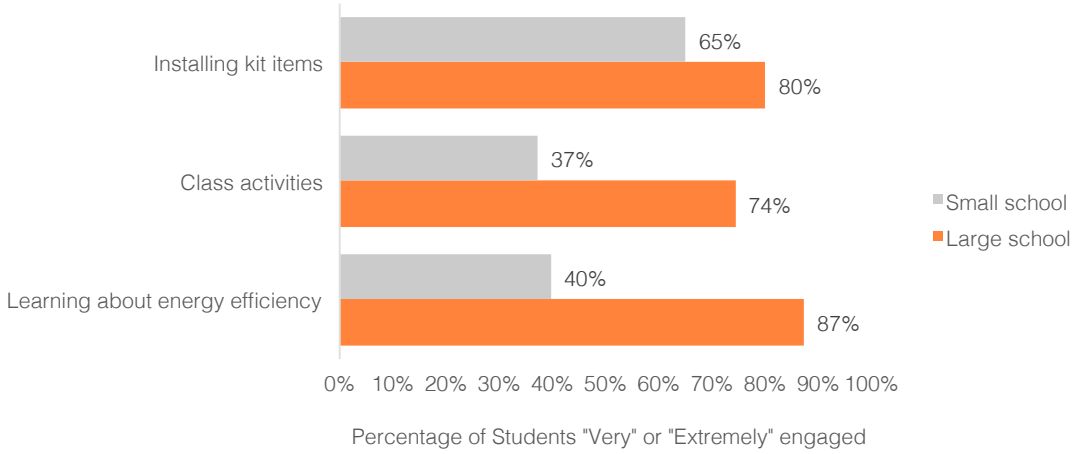
The evaluation team asked teachers to evaluate how engaged their students were with various aspects of the product using a scale from 0 to 10 with 0 meaning "not at all engaging" and 10 meaning "extremely engaging." As shown in Figure 3-10 the participating teachers said students were generally "very" or "extremely" engaged with all parts of the product with the exception of filling out the student survey form. Overall, the energy-efficiency kit products had the highest level of engagement, with 92% of teacher participants reporting their students being either "very" or "extremely" engaged. Teachers also said installing the kit items at home with their families (74%) and learning about energy efficiency (72%) were highly engaging.

Figure 3-10. Student Engagement with Product Components



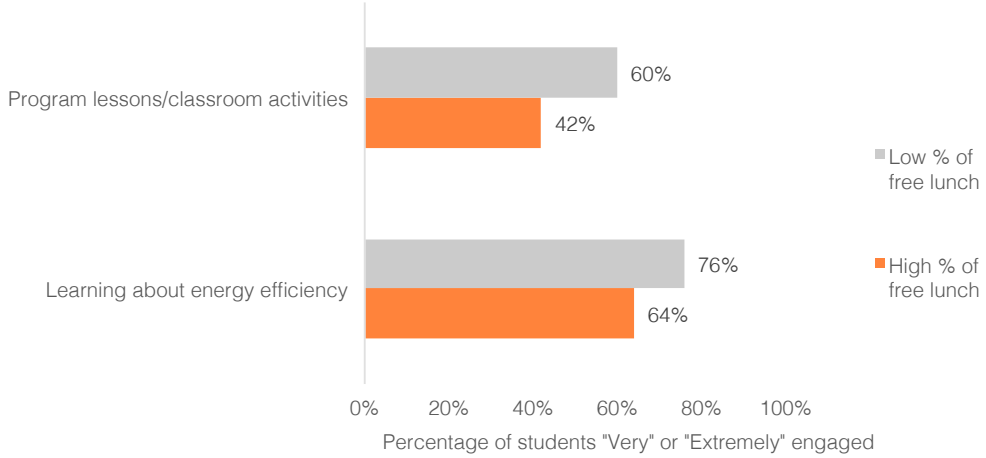
The participating teacher survey results also highlighted some key differences in levels of engagement between school types, both in terms of size and the percentage of students enrolled in a free lunch program. As shown in Figure 3-11, teachers in large schools reported higher levels of student engagement across multiple categories compared to teachers in small schools including learning about energy efficiency (87% vs. 40%), class activities (74% vs. 37%), and installing kit items (80% vs. 65%).

Figure 3-11. Student Engagement Comparison Between Small and Large Schools



Additionally, Figure 3-12 shows that teachers in schools with a low percentage of students enrolled in a free lunch program reported a higher student engagement level with the product lesson plans and classroom activities than teachers with a high percentage of students on free lunch (60% vs. 42%). Those teachers also reported higher student engagement with learning about energy efficiency than the teachers with a high percentage of students enrolled in a free lunch program (76% vs. 64%).

Figure 3-12. Student Engagement Comparison Between Schools with Low and High Percentage of Students on Free Lunch



3.9 Teacher and Household Satisfaction and Benefits

Both the participating households and teachers evaluated their satisfaction with various components of the School Education Kits product using the following scale: not at all satisfied, not very satisfied, somewhat satisfied, very satisfied and extremely satisfied. Overall, both teachers and participating households reported high levels of satisfaction with the product and had relatively minor recommendations for improving the product. The following section outlines the satisfaction levels

for the product components, the identified benefits of the product, and recommendations for improving the product going forward.

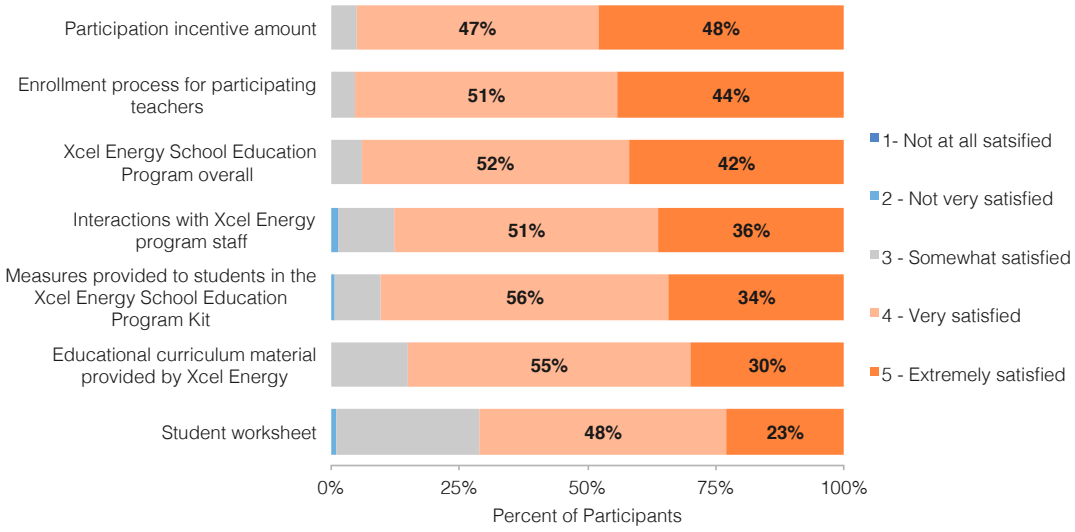
Participant Satisfaction

The evaluation team asked participating teachers to evaluate their satisfaction levels for the following individual components of the product:

- The educational curriculum material provided by Xcel Energy;
- The measures provided to students in the Xcel Energy School Education Kits product;
- The student worksheet;
- The enrollment process for participating teachers;
- Interactions with Xcel Energy product staff;
- The participation incentive amount; and
- The product overall.

As shown in Figure 3-13 teachers reported high levels of satisfaction across all product components. On average, 87% of participating teachers reported being very or extremely satisfied across all product categories. The product components that received the highest satisfaction ratings were the enrollment process for participating teachers and the participation incentive amount, with 95% being very or extremely satisfied. Participating teachers were the least satisfied (although still satisfied) with the student worksheet, with 71% reporting being very or extremely satisfied and 28% being only somewhat satisfied.

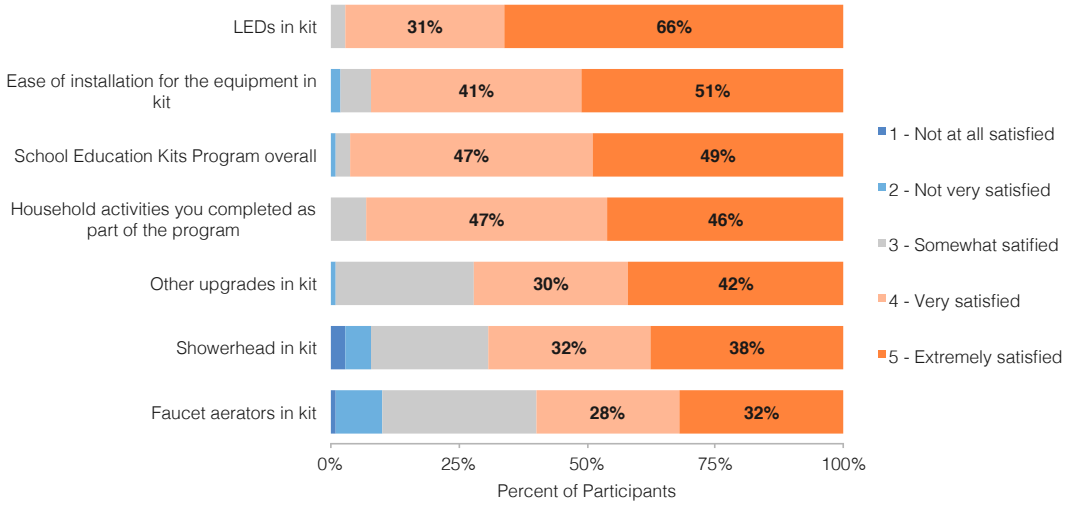
Figure 3-13. Teacher Satisfaction



Consistent with participating teachers, household participants expressed high levels of satisfaction with the School Education Kits product across all the product components. Figure 3-14 shows the levels of satisfaction across the individual components of the product. On average, 83% of participants reported being very or extremely satisfied across all categories, along with 96% of

household that were very or extremely satisfied with the product overall. Of the products that were in the kit itself, the LEDs had the highest satisfaction among participants, with 97% reporting that they were very or extremely satisfied. Participants also reported high levels of satisfaction with the showerheads that were included in the kit (70%). Participants were the least satisfied (although still relatively satisfied) with the faucet aerators, with 60% reporting being very or extremely satisfied.

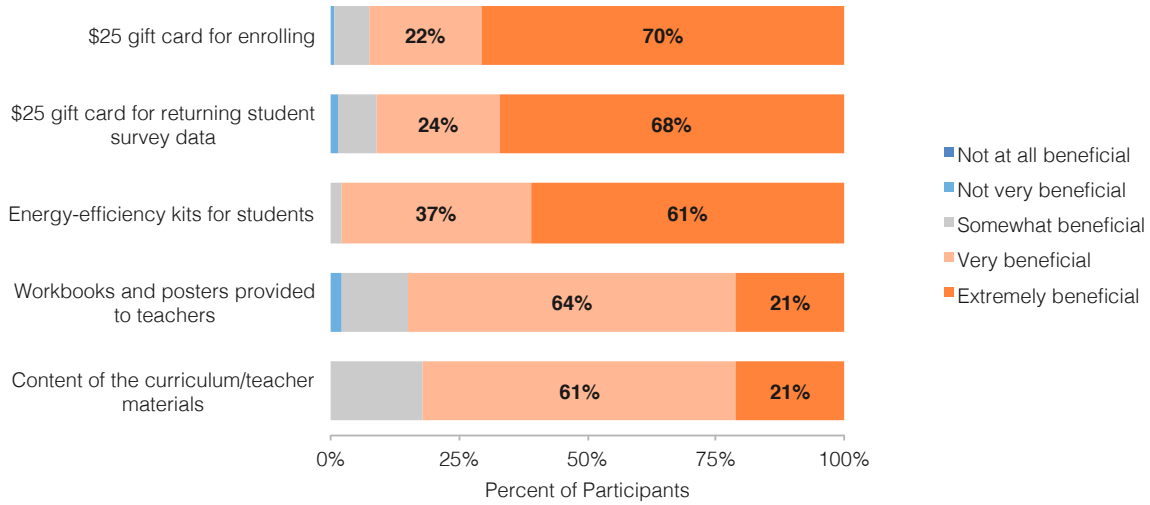
Figure 3-14. Household Satisfaction



Product Benefits

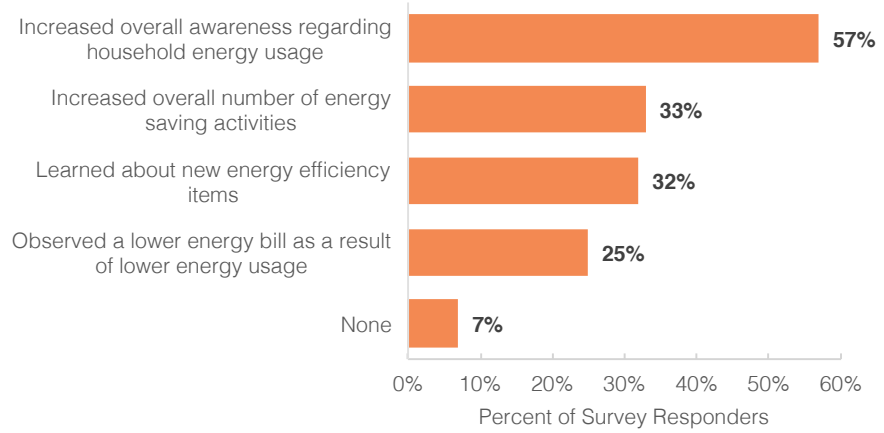
The evaluation team also asked teachers how beneficial various components of the product were, to help identify which components were most beneficial to teachers and potentially identify which product components could be improved to accommodate teachers. Overall, as shown in Figure 3-15, teachers indicated all the product components were beneficial. The energy-efficiency kits for the students were recognized as the most beneficial, with 98% of participants reporting they were either very or extremely beneficial. The incentives for enrolling in the product and returning student survey data were also highly beneficial, as 92% of participants responded that they were very or extremely beneficial.

Figure 3-15. Teacher Benefits



Similarly, 93% of participating households said they have observed at least some direct benefits as a result of participating in the School Education Kits product. The most common benefits identified by participating households included increasing household energy usage awareness (57%), an increase in the overall number of energy saving activities in the household (33%), and learning about new energy efficiency items (32%). Figure 3-16 summarizes the benefits that participants reported observing as a result of the product.

Figure 3-16. Household Benefits



Additionally, 49% of households said they have increased the number of conversations about energy efficiency since participating in the product, while 64% of households now discuss ways to save energy around the home as a family. These findings indicate that the School Education Kits product has extended benefits beyond the energy savings of the kit measures by spurring conversations about energy efficiency among participants in the product that may increase their household's energy efficiency purchases going forward.

Participant Recommendations

Consistent with the high reported levels of satisfaction with the School Education Kits product, only 24% of participant households had specific recommendations for improvement. As shown in Table 3-11 below, the most often-cited recommendation was for more information on other ways to save (n=8), followed by more LEDs and aerators (n=6). A small number of participants also recommended adding more measures to the kits including smart thermostats, insulation, and lighting timers (n=5).

Table 3-11. Participating Household Recommendations

Recommendation	Number of Mentions
Information on other ways to save	8
More LEDs/aerators	6
Include other measures	5
Improvements to existing kit measures	4
Information on solar/renewables	3

The evaluation team also asked participating teachers to provide recommendations regarding the product as a whole as well as for what to include in the kit going forward. Table 3-12 and Table 3-13 summarize the recommendations for the product and for the kit measures provided by participating teachers. Similar to the participating households, the majority of teachers did not have specific recommendations for improving the School Education Kits product.

The most common recommendations included flexibility with the timeline, improvement to online content, in-school presentations, and more video content (n=4). Additionally, different size and type of LEDs were the most recommended kit measures (n = 6), followed by solar lights (n=5). A small number recommended including weather stripping as part of the kit (n=3).

Table 3-12. Product Recommendations From Participating Teachers

Recommendation for Product	Number of Mentions
Flexibility with timeline	4
Improvement to online content	4
In-school presentation	4
More video content	4

Table 3-13. Kit Measure Recommendations From Participating Teachers

Recommendation for Kit	Number of Mentions
Different size/type LED	6
Solar light	5
Shower timer	4
Outside water/sprinkler control	3
Weather stripping	3

3.10 Peer Utility Program Comparison

The evaluation team reviewed comparable school education programs at six peer utilities across Colorado, Michigan, Illinois, New York, Indiana, and Ohio—through online research and program staff interviews—to assess Xcel Energy's School Education Kits product in context with other similar programs in the region. The evaluation team reviewed the peer utilities through online research and reviews of annual reports in addition to completing four interviews with program managers. Overall, the peer utilities examined by the evaluation team had offerings similar to the School Education Kits product with regards to overall program structure, included kit measures, and program implementation. The following subsections outline the specific comparison metrics used by the evaluation team, focusing both on the design and the performance of the peer utility programs:

- Program design
- Key performance indicators (KPIs)
- Program marketing and contractor trade partnerships

Program Design

All six of the peer utilities that the evaluation team reviewed offer energy efficiency kits to elementary or middle school-aged students. All of the peer utilities also use a third-party firm to help implement the program, similar to the approach used by Xcel Energy.[12] Interviewed utilities noted that the third-party implementers often take on a primary role in regards to program marketing, outreach, enrollment, data management, and kit creation, while the utilities focus on high-level oversight. While all of the utilities rely on third-party implementers, the actual implementation of the programs differed across utilities. Three of the six programs followed a similar structure to the Xcel Energy School Education Kits product, in which teachers enrolled in the program and received educational material and kits to distribute to their students. The other three programs incorporate a structure in which program staff provide in-school presentations for teachers and students to help promote energy conservation and increase overall awareness of energy efficiency. The in-school presentations are typically completed by program support staff, which include third-party implementers or contracted educational partners. One of the programs also offers households the option to participate directly via the program website as long as they are in the utility's service territory.

Table 3-14 shows some of the key program structure metrics across the peer utility programs. In general, the energy efficiency kits included similar measures, and the targeted groups were relatively consistent across utilities. However, certain utilities have expanded their programs to reach a wider range of students and teachers and have created targeted material that is age-appropriate depending on if the participant is an elementary school or a middle school student.

[12] At least one of the participating peer utilities uses AM Conservation (similar to Xcel Energy) as their third-party implementer.

Table 3-14. Peer Utility Key Program Metrics

Utility	Energy Efficiency Kit Measures	Target Audience	Enrollment Process	In-School Presentations
1	LEDs (3x), high-efficiency showerhead, kitchen aerator, bathroom aerator, digital thermometer	5th grade	Teachers	No
2	LEDs, high-efficiency showerhead, kitchen aerator, bathroom aerator	1st – 8th grade	Teachers	Yes
3	LEDs (4x), smart power strip, high-efficiency showerhead, kitchen aerator, bathroom aerator, hot water temperature card, thread seal tape	5th – 8th grade	Teachers	Yes
4	LEDs, high-efficiency showerhead, kitchen aerator, bathroom aerator, water flow meter bag, outlet insulators, Teflon table, hot water gauge card, energy savers booklet, product sheet	1st – 8th grade	Teachers/households	Yes
5	High-efficiency showerhead, air temperature check cards, kitchen aerator, bathroom, aerator, educational material	5th – 8th grade	Teachers	No
6	LEDs (3x), high-efficiency showerhead, kitchen aerator, bathroom aerator, digital thermometer, furnace filter whistle, flow test bag	5th grade	Teachers	No

Key Performance Indicators (KPIs)

In addition to understanding the structures of other peer utility school education programs, the evaluation team also sought to identify KPIs from the participating peer utilities to better evaluate the effectiveness of Xcel Energy's School Education Kits product. The KPIs for the program comparison included participation, gas and electric savings targets, actual program savings, kit measure installation rates, and NTG methods. While the evaluation team collected all available information across the peer utilities, comparing across utilities proved challenging at times given the variety of program designs and tracking data available. Additionally, because a large portion of the peer utility programs were operated by third parties, the program managers did not always have the available program information available or were unwilling to share the information. Table 3-15 below outlines the available KPIs across the participating peer utilities.

Table 3-15. Peer Utility Key Performance Indicators[13]

Utility	Participants (Kits)	Participants (Schools)	Installation Rates	2017 Gas/Electric Savings Targets	2017 Gas/Electric Savings	NTG Method
1	100,000	-	Household survey	21,700 dth; 9,000,000 kWh	21,700 dth; 9,000,000 kWh	Deemed; 0.9
2			Household survey			Calculated
3	7,500	229 schools	Household survey	5,070 dth; 814,543 kWh	5,070 dth; 814,543 kWh	Deemed; 1.0
4	67,000	1,300 schools	Optional response card			Calculated
5	-	-	-	4,992 dth; 1,084,487 kWh	5,183 dth	

Program Successes, Challenges, and Ongoing Changes

The evaluation team also assessed what the successes, challenges, and planned changes were for the peer utilities. In general, interviewed peer utilities noted that the school education programs have been functioning well and have exceeded initial savings and participation targets. Some of the notable success that peer utilities noted are included below:

- Third-party implementer staff typically handle a majority of the day-to-day operations and have experience working with a variety of similar utility programs. Three of the interviewed utilities said that the most effective form of program outreach and marketing has been direct outreach from the third-party implementer.
- All four of the interviewed utilities said that the school education programs help with community outreach and promoting energy efficiency among households in their service territories. They acknowledged that these types of programs help drive awareness for their other utility programs and generally are very cost effective within their residential program package.
- Three of the utilities said they have seen consistent participation growth over the last few years as a large percentage of teachers continue to participate every year and recruit new teachers when possible.
- One utility has worked with their third-party implementer to customize the educational material based on grade level. This has helped them expand their target audience and potentially distribute the energy efficiency kits to a larger percentage of households in their service territory.

[13] The sixth utility reviewed by the evaluation team did not provide any relevant KPI data and did not provide the information in an annual report

Overall, there were not many specific challenges noted by the peer utility participants. The few challenges that were mentioned included:

- Extensive waitlists for the in-school presentations provided by one of the larger utilities.
- Not having any feedback from schools that have decided not to participate in the program. One utility noted that they estimate around 20% of schools choose to not participate and do not share feedback with the utility, and the utility does not know the reasoning.
- Finding solutions to further encourage households to install the kit measures and submit the program documentation so utilities can account for their household savings.

Going forward, the peer utilities said that for the most part, they will continue to implement their school education programs as they have done in the past. All of the interviewed peer utilities said they are always open to new kit measures as the residential market continues to evolve. Some of the specific upcoming changes and considerations the peer utilities added are included below.

- Two of the peer utilities noted they continue to experiment with household and school incentives to help drive participation and kit installation rates. One utility offers a chance to win a $1,000 household gift card and cash rewards ranging from $250 to $2,500 for participants that install the kit measures and submit the return card that provides details on their installation. Another utility has utilized a $250 incentive to the school with the highest percentage of installations and is currently piloting a $5 Amazon gift card incentive for any household that installs the kit measures and completes the documentation on the program website.
- Two of the peer utilities said they are currently looking into smart power strips as a possible solution to include in a future school kit, along with one utility that said they may consider smart thermostats as an add-on measure at some point.
- Two of the peer utilities said they are continually trying to improve their online and digital platforms to increase engagement among households and identify interactive ways for students and their parents to learn more about the program and ways to save energy at home.

4. CONCLUSIONS & RECOMMENDATIONS

This chapter presents the evaluation team's key findings and associated recommendations regarding the Xcel Energy School Education Kits product in Colorado. Key findings were developed based on results from the participating household and teacher surveys, teacher follow-up interviews, and peer utility benchmarking research. All recommendations are based on key findings from the evaluation research and are designed to reflect the context of future product years, acknowledging expected changes in the market and planned product changes. The evaluation team developed these recommendations to help further improve the design and delivery of the School Education Kits product to its customers.

Key conclusions and recommendations are as follows:

- **The evaluation team estimated that the School Education Kits product does include some household free-ridership (0.32) but also includes a more significant amount of spillover (0.35).** Currently, the product has adopted an NTGR of 1.0 under the assumption that households could not receive the kit as a whole without participating in the School Education Kits product. However, given that the kit is comprised of individual measures, the evaluation team rationalized that free ridership may still exist as households could purchase the individual measures—such as LEDs—separately from the kit. This estimated free-ridership value accounts for the 32% of savings that would have happened in the absence of the product. However, the spillover calculation (35%) helps capture that while the kits themselves may incur relatively small energy savings, they are increasing awareness in households and spurring additional energy efficiency investments. The vast majority of the spillover was attributable to "out-of-kit" measures (91%), given that the "in-kit" spillover included only additional energy efficient showerhead and aerator purchases.
    - **Recommendation 1: The evaluation team recommends that Xcel Energy maintain the NTGR of 1.0 for the School Education Kits product for the 2018 product year.** Beyond providing households with a free kit of energy-saving equipment, the School Education Kits product is designed to help increase awareness of energy efficiency and help promote additional energy efficiency purchases in the future. As a result, Xcel Energy should recognize the overall influence of the School Education Kits product and the additional, oftentimes larger, energy efficiency investments that households end up making as a result of participating in the product as part of their energy savings contributions. While the calculated NTGR was slightly above 1.0 (1.03), the evaluation team computed an approximate 90% confidence interval based on the random error associated with the estimates of free-ridership and spillover, which ranged from 0.88 to 1.18. Since Xcel Energy's current assumed value of the NTGR falls within this interval (1.0), the evaluation team finds no evidence to suggest any significant changes to the NTGR for the 2018 product year. However, the evaluation team believes the high level of product spillover and NTGR will continue going forward, especially as more households participate in the product that may have otherwise not had exposure to energy efficiency.

- **Based on results from the participating household web survey, the estimated installation rates for the faucet aerators and energy efficient showerheads is lower than the 2017 Home Energy Worksheet estimates.** While the household survey confirmed the high level of installation rates for the kit LEDs from the Home Energy Worksheet data (93% compared to 98%), the other kit measures were installed less frequently than the Home Energy Worksheet estimates indicated. For the energy efficient showerheads, the Home Energy Worksheet data provided estimates that 73% of households had or would install the measure compared to only 56% of households in the web survey indicating they actually had completed the installation. There were similar discrepancies for the bathroom aerators (69% compared to only 42%) and kitchen aerators (66% compared to only 41%). The primary reason these discrepancies occurred is because the Home Energy Worksheet estimates—which served as the 2017 product estimates—include all households that said they "will install" the measure but had not at the time of completing the worksheet.
    - **Recommendation 2: The evaluation team recommends that the product use adjusted installation rates that take into account that only a percentage of households that said they "will install" energy efficient showerheads and faucet aerators in the Home Energy Worksheet actually end up installing the measures. Specifically, this recommended adjustment includes using only 50% of the "will install" household responses in the installation rate estimate.** The evaluation team arrived at this adjusted estimate based on a comparison of household responses to the Home Energy Worksheet and the web survey. Using the web survey responses, the evaluation team estimated that approximately 41% of households that indicated they "will install" the gas measures in the Home Energy Worksheet actually installed the measure. Using a 95% confidence interval, the lower bound estimate was 32% while the upper bound was 50%. The installation rate calculation should continue to include 100% of households that said they "have installed" the gas measures in the Home Energy Worksheet. The evaluation team also believes these installation rates could change over time and that the product should continue to utilize the data from the completed Home Energy Worksheets. The process for LED installation rate estimates does not need to be modified given the high level of installation rates confirmed in the household survey. These findings suggest that a large percentage of households that said they "will install" the LEDs actually ended up installing them, unlike other kit measures.

- **Teachers in schools with a higher percentage of students on free lunch programs reported being able to provide energy efficiency kits to their students as a primary motivation for enrolling in the School Education Kits product.** None of the teachers in schools with a low percentage of students on free lunch programs said being able to provide the kit measures to their students was a primary motivation for participating compared to 29% of teachers in schools with a high percentage of students on free lunch programs. Teachers with a low percentage of free lunch students prioritized other factors such as the opportunity to teach their students about energy efficiency.
    - **Recommendation 3: The evaluation team recommends that Xcel Energy and its supplementary product staff proactively target low-income schools that have a higher percentage of students on free lunch programs.** In addition to a higher teacher motivation, survey results also indicated that students in these school types were more engaged with installing the kit measures included in the Take Action

Kits. Households in these schools are less likely to have previously invested in energy efficient equipment, and targeting these school types will lead to higher kit installation rates and increased exposure to energy efficiency among household that may have otherwise not purchased and installed efficient equipment in their homes. This increased exposure may also lead to increased customer spillover in subsequent program years, positively impacting the product NTGR. The findings from both the teacher and household web survey results highlight how the structure of the School Education Kits product allows it to be a cost effective method of reaching low-income households.

  - **Recommendation 4: The evaluation team recommends that Xcel Energy coordinate with implementation staff to update a portion of product marketing material to focus on low-income schools directly.** These adjustments may include prioritizing the energy benefits and "free" structure of the product to prospective teachers in these schools, while also addressing that it is easy for teachers to enroll in the product and does not require them to restructure their existing lesson plans or add additional material to their curriculum. Because a majority of interviewed teachers mentioned that participating in the product can seem burdensome and overwhelming for new teachers and teachers in lower income schools with fewer resources, it is important to promote the School Education Kits product as an easy, free way for teachers to help their students access energy efficiency solutions for their households.

- **Participating households are becoming more familiar with LEDs, and a majority of households have previously purchased and installed at least one LED for their home prior to participating in the School Education Kits product (71%).** Of that 71% that already had LEDs installed, 90% had three or more LEDs installed, further indicating that the residential market saturation for LEDs continues to increase. While currently, 98% of participating households are still installing the kit LEDs, this high market saturation indicates that the future energy savings potential from the LEDs may be limited. Free-ridership in the School Education Kits product will also continue to increase as the number of households that have LEDs or would be looking to purchase LEDs increases.
  - **Recommendation 5: The evaluation team recommends that the Xcel Energy product staff explore the feasibility of additional kit measures such as outdoor solar lighting, smart energy strips, and programmable thermostats.** The inclusion of additional kit measures going forward will allow Xcel Energy to adapt to the changing residential market and provide efficiency measures that are desired by households and can help provide energy savings for the product. Participating houses and teachers, along with program staff at peer utilities, identified these measures as potential solutions to consider over the next few program cycles. The implementation process for these additional measures should also be considered. For example, a programmable thermostat offering may not be feasible in a standard kit, but product staff could consider an information form in the kit that allows households to go online and ask for a thermostat or direct them to other Xcel Energy residential programs that may offer smart thermostat rebates. Any additional kit measure should undergo a cost-effectiveness test (similar to that of currently included measures) to ensure that the inclusion of the new kit measure is feasible from Xcel Energy's perspective.

- **Participating teachers and peer utility staff noted that students may benefit from in-school presentations that highlight the energy efficiency equipment included in the kit and help showcase the importance of energy efficiency. They also noted that students tend to engage most with interactive content including hands-on classroom activities and online platforms.** Three of the participating peer utilities' programs include some method of program staff—or third-party support staff —visiting participating schools for an educational demonstration. These engagements are designed to help promote the school education programs to prospective teachers and help educate students on ways to save energy at home both through the kit measures and through other energy-saving practices. Participating teachers noted that fifth and sixth grade students engage well with interactive materials and could benefit from program staff doing an in-person event to help alleviate some of the burden the teachers have on teaching the lesson plans and promoting the program. Other peer utilities also include additional online content—such as educational games and videos—that further allow households to interact with the program at home and through a platform that students find engaging.
    - **Recommendation 6: The evaluation team recommends that Xcel Energy consider the opportunity for product staff or implementation staff to do at least some in-school demonstrations or trainings to help increase awareness and further promote the School Education Kits product.** By utilizing in-school demonstrations as an additional marketing tool for attracting teachers, the product can help increase school enrollment and potentially reach teachers and schools that may otherwise not be interested in participating because of the perceived burden of including the educational material in their existing curriculum. While the educational material will still be provided as part of participation, the in-school trainings can help teachers familiarize themselves with the product and the material before distributing the kits to their students and teaching the lesson plans.
    - **Recommendation 7: The evaluation team recommends that Xcel Energy evaluate the potential to provide additional online resources to the** product **website include supplementary educational videos, an "other ways to save" resource list, and potentially interactive games.** Technology continues to expand in schools and at home for students and providing ways for participants to further engage with the product online can potentially increase overall product awareness and product engagement. An enhanced online platform can also serve as a marketing resource for product staff to market the product to prospective teachers that may benefit from the online resources they can encourage their students to utilize.

- **The most commonly cited improvement for the School Education Kits product among household participants was to help provide additional information on other ways to save energy (n=8).** Additionally, 52% of households have increased the number of conversations about energy efficiency since participating, with 64% that now discuss ways to save energy around the home as a family. These findings together help further indicate that households are interested in finding additional ways to save energy in their home and look to Xcel Energy as a primary resource for identifying these strategies.

    - **Recommendation 8: The evaluation team recommends that the Take Action Kit include an informational pamphlet for households to learn about additional opportunities to save energy and invest in energy efficiency through other Xcel Energy program offerings.** These pamphlets may also include

more general information on types of measures and basic practices that households can purchase or implement to help save energy. By promoting both product-rebated measures and potentially non-rebated measures outside of other residential products, the pamphlet can help drive residential product participation and future spillover for the School Education Kits product.

EMI CONSULTING

Xcel Energy
School Education Kits Product
2018 Evaluation

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APPENDICES

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TABLE OF APPENDICES

APPENDIX A: EVALUATION PLANNING DOCUMENTS

A.1 Evaluation Plan

To support the process and impact evaluation of the 2017 Xcel Energy efficiency programs, the EMI Consulting evaluation team will be conducting a process evaluation of the Xcel Energy Colorado School Education product, which provides *Energy Efficiency Take Action Kits* to Colorado fifth and sixth grade students. As described in greater detail below, Xcel Energy provides the kits, which contain energy saving measures to be installed in the student's home, through the School Education Kits product.

This memo provides an updated plan for the 2018 Xcel Energy Colorado School Education product evaluation based on the original scope of work, staff feedback during the evaluation kick-off meetings, and staff interview findings.[1] This evaluation plan includes the following sections:

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

Product Overview

Energy efficiency school kit programs are an effective way to achieve energy savings while educating and reaching out to residential and hard-to-reach customer segments, such as residential customers residing in multifamily residences. They can also be an effective and innovative way to introduce customers to emerging and/or unfamiliar energy efficiency technologies, thereby increasing the market saturations and awareness of these technologies.

The Colorado School Education Kits product encourages energy savings through educational materials and direct install measures provided to 5th and 6th grade students whose teachers enroll in the product. Students participate in classroom activities and bring home kits containing energy efficiency measures to install in their homes. The kits include a variety of direct install measures such as LED bulbs, an LED nightlight, a kitchen aerator, a bathroom aerator and a Low Flow Showerhead, which are distributed by an implementation firm, AM Conservation.

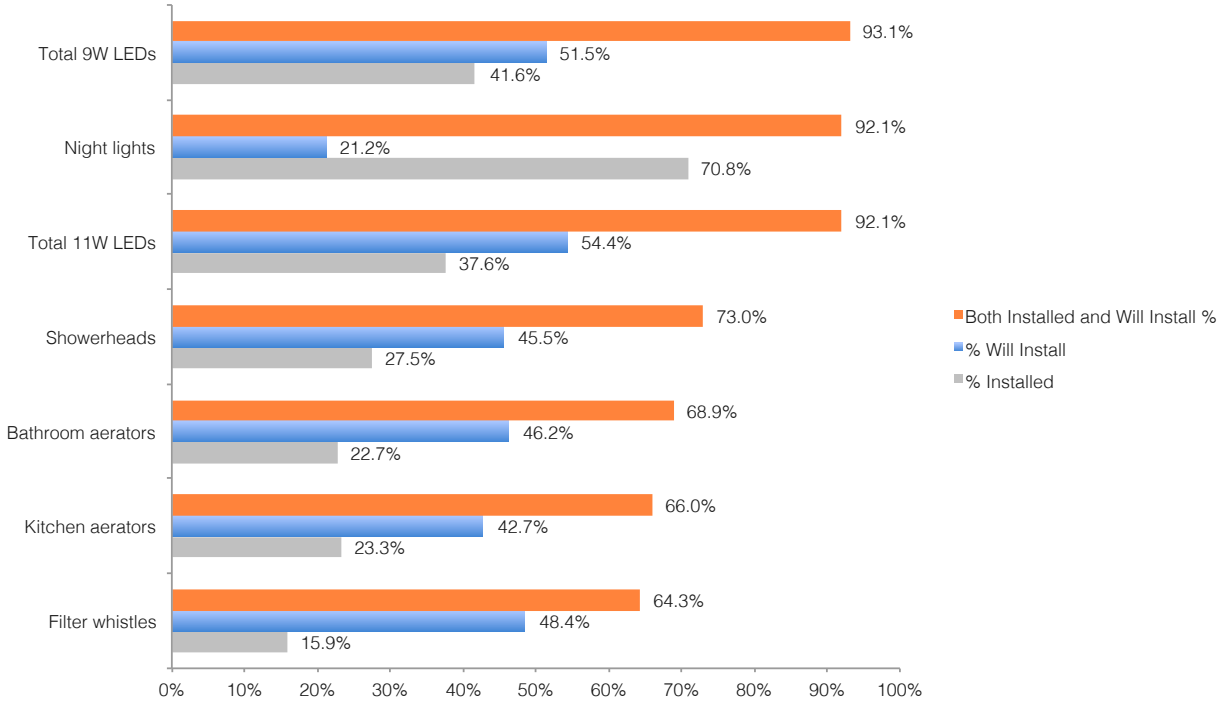
The product includes two sign-up periods each school year, once during the fall semester and again during the spring semester. Once teachers enroll their class in the product, they choose a date they would like to receive the materials, which include the kits of energy efficiency measures and the educational lesson plans. Teachers can choose to implement as much or as little of the lesson plan material as they desire depending on how the material corresponds to their existing lesson plans. When the kits are distributed, students are asked to complete the Home Energy Worksheet, which includes instructions for installing each measure and provides formulas to estimate the potential energy savings from the energy efficient measures in the kit. The Home Energy Worksheets are then either collected and mailed in by the participating teacher or uploaded to AM Conservation's online

[1] The original scope of work is included in the evaluation team's contract with Xcel Energy for the 2017-2018 DSM evaluations.

worksheet portal. The product offers teachers a tiered reward structure based on mailing back or uploading a certain percentage of their students' completed Home Energy Worksheets. The reward structure includes $10 for teachers that return less than 50% of their students' completed worksheets, $15 for returning between 50 and 79 percent of the completed worksheets and $25 for returning 80 percent or more of the completed

In 2017, the Colorado School Education Kits product distributed 38,633 kits to 1,104 classrooms across the state. Of those households that received kits, 17,563 returned Home Energy Worksheets (46%) with responses to questions on whether particular measures were installed, will be installed, or will not be installed in the home. As shown in Figure 1, students that returned the Home Energy Worksheet reported a high level of installation for the majority of measures included in the School Education Kit. For example, over 90 percent of responding students reported they had already installed or were planning to install the 9W and 11W LED bulbs and the nightlight.

Figure 1: 2017 Installation Rates



Evaluation Overview

The 2018 evaluation of the School Education Kits product will consist of both an impact evaluation and a process evaluation. The process evaluation will focus on teacher experience presenting the educational materials to students and parent experience as the students install measures from the *Energy Efficiency Take Action Kits* and estimate potential energy savings. The impact evaluation will focus on free ridership associated with the measures contained in the kits and spillover associated with increased awareness of energy efficiency measures and motivation to install such measures in participants' homes.

Impact Evaluation

The *Energy Efficiency Take Action Kits* are not available by customer request or through rebates on purchases of energy efficiency measures. Rather, Xcel Energy proactively provides energy kits to participating fifth and sixth grade teachers at schools located within Xcel Energy's service territory to be distributed to students as part of an overall energy education product. Because the kits are not available without the product, Xcel Energy assumes a net-to-gross (NTG) ratio of 1.0 for the School Education Kits product.[2] While this seems like a reasonable assumption, the evaluation team's perspective is that it is not the kit that delivers energy savings, but rather the measures contained within the kits—the LED bulbs, faucet aerators, and low-flow showerhead. If the parents of a participating child have already adopted these technologies—which are widely available—into their home, then their receiving of these measures through the kit is a form of free ridership. Therefore, the evaluation team believes it is necessary to develop estimates of free ridership for the School Education Kits product.

The evaluation team also believes it is likely that participation in the School Education Kits product increases customer awareness of energy efficiency, and potentially motivates some households to purchase other energy efficiency equipment (e.g. high efficiency refrigerator) or to complete energy efficiency upgrades (e.g., install additional insulation). Many of these energy efficiency measures will be installed through other Xcel Energy efficiency products (which would claim any energy savings associated with the new energy efficient equipment or measures), but not all. Energy savings from measures not claimable through another Xcel Energy product (e.g. additional LED bulbs) would be claimable spillover for the School Education Kits product. The evaluation team, therefore, recommends conducting spillover analysis as well as analysis of free ridership—i.e., a complete NTG analysis.

Process Evaluation Overview

The objective of the process evaluation of the School Education Kits product is to understand teacher and student experiences with the technologies included in the kit, including assessing teacher training materials and gauging households' satisfaction with the product.

To address these objectives, the evaluation team interviewed the Product Manager overseeing Xcel Energy's School Education Kit product and two representatives from AM Conservation, the third-party implementer. The interview focused on the roles and responsibilities of product implementation, goals and achievements, marketing efforts and data tracking. Findings from this interview are presented in the Xcel Energy CO School Education Kits Evaluation: Staff Interview Summary Notes memo.

The evaluation team will also administer web surveys for teachers and parents of children that participated in the product. The surveys will gather information on overall satisfaction with the product experience, including information on the ease of installing the measures, teachers' opinions of the educational material, and how the product may impact energy practices within households. After completing the web surveys, the evaluation team will also complete in-depth interviews with a

[2] Xcel Energy 2017/2018 Demand-Side Management Plan Electric and Natural Gas, Public Service Company of Colorado Proceeding No. 16A-012EG, July 1, 2016, Revised July 21, 2016 and November 17, 2016, pg. 392 of 507.

subset of participating teachers to further probe on teacher satisfaction with the product. The team will also conduct a peer review of similar products implemented in peer utility territories to gather data on best practices and lessons learned through other products' experiences.

Based on the project kick-off meeting, product review and staff interviews, the evaluation team identified the following key topics and research questions to highlight in the process evaluation tasks including the parent and teacher surveys:

- What are the backgrounds for participating teachers, including experience, primary subjects they teach, and their existing views on energy efficiency?
- How well does the educational curriculum material in the Product Kits mesh with existing energy curriculum and how do teachers incorporate the material into lesson plans?
- What parts of the product do students engage with the most and how can the material be improved to better fit the needs of households?
- What aspects of the Product Kits are households installing most frequently and what measures are most useful for households?
- How satisfied are teachers and parents with the product and what suggestions – including adjustments to the curriculum and/or the measures included in the kit – do both parties have for improving the product going forward?
- How familiar are parents with the energy efficiency measures included in the kits and to what extent were these measures installed in the home prior to receiving the kit?[3]
- How has their experience with the kits, the educational materials provided to their child, and their child's experience with the classroom and related activities influenced them to install additional energy efficiency measures in their home?[4]

Data Collection Activities and Sampling Plans

The evaluation team will conduct a variety of data collection activities to support the research questions outlined above. Table 1 outlines each research task and the associated research objectives; details on each data collection activity are provided in the sections that follow. Note that because this product is a large contributor to Xcel Energy savings goals, several of the proposed data collection activities have larger sample sizes than those used for other product evaluations. Specifically, we propose to survey 150 teachers who participated in the School Education Kit product and 100 parents of children who received kits. In addition, we propose to conduct follow-up interviews with 15 teaches in order to probe further on their satisfaction with the product and identify possible improvements to the kits or educational materials. These three research tasks are marked as "enhanced scope" in the table below.

[3] Because Xcel Energy proactively provided the kits through the School Education Kit product (as opposed to as a rebate on a purchase made by a customer), Xcel Energy assumes free ridership to be zero. (Xcel Energy 2017/2018 Demand-Side Management Plan Electric and Natural Gas, Public Service Company of Colorado Proceeding No. 16A-012EG, July 1, 2016, Revised July 21, 2016 and November 17, 2016, pg. 392 of 507).

[4] While the purpose of the kits is to promote energy efficiency among residential customers, Xcel Energy does not assume the School Education Kit product results in increased demand ("spillover") for energy efficiency products.

Table 1. Colorado School Education Kits Product Summary

Research Task	Sample Size	Enhanced Scope	Objectives
Staff Interviews	2		Understand the key components of the product and inform evaluation plan and web survey guides
Participating Teacher Surveys	150	✓	Gauge teacher satisfaction with the product kits and educational curriculum, understand the types of teachers that participate in the product, and capture suggestions for improvements to the product
Participating Parent Surveys	100	✓	Gauge household satisfaction with the product kits; identify which measures are most important to households (and most frequently installed); capture information on prior familiarity with the measures include in the kits and the degree to which the measures were installed in the home prior to receiving the kit (to estimate free ridership and spillover for NTG analysis); capture suggestions for improvements to the product
Follow Up In-depth Interviews with Teachers	12	✓	Probe further on participant satisfaction with the product experience and identify possible improvements to the product kits
Benchmarking Peer Utilities	6 utilities		Evaluate how the Xcel Energy School Education Kits product compares to other similar utility products

Staff Interviews

In February 2018, the evaluation team completed two in-depth interviews with product staff including the product manager and representatives from the third-party implementer that creates and distributes the material. The interviews were conducted over the phone and lasted approximately one hour. These interviews, combined with the kickoff meeting, allowed the evaluation team to create a focused evaluation plan and improved data collection materials.

Teacher Web Survey

The evaluation team proposes to complete 150 surveys with randomly selected teacher participants. The purpose of this task is to capture data on the backgrounds of participating teachers – including their general outlooks towards energy efficiency – and capture their satisfaction with various components of the product including the actual kits, the educational curriculum and Xcel Energy's energy efficiency efforts. The surveys will also assess how teachers learned about the product, why they decided to participate in the product, and what parts of the product students find most engaging. The survey will be administered online through the web survey platform Qualtrics. The

survey will be distributed to a randomly selected sample of teachers. Those that complete the web survey will receive a $25 incentive and be automatically entered to win one of three $100 incentives.

Parent Web Survey

The evaluation team proposes to complete 100 surveys with randomly selected parents of students who received a household kit through the product. The purpose of the survey is to assess the overall satisfaction that parents of participating students have with the School Education Kits Product and better understand when, where, and how measures included in the kits are installed in households. The survey will also include questions about which measures are most frequently installed and why; which measures are least likely to be installed and why; what energy efficiency measures households may be interested in installing. The survey will also include a battery of self-report questions designed to determine product-related free ridership and spillover.

We will administer the survey online through the web survey platform Qualtrics. We will send a link to the survey in an email to a randomly selected sample of parents of children who received a kit in 2017 and indicated their interest in completing a survey on the Home Energy Worksheet (n=2,449).

Peer Utility Benchmarking

The objective of the peer utility benchmarking task is to gather information on comparable school education kit products operated by other utilities. Specifically, we will interview managers of these products to understand how their product is structured, the relative importance of the school kits product within their portfolio of residential energy efficiency products, successes and challenges of the product, and recent changes they have made or expect to make to the product. We will interview product managers from six peer utilities. The evaluation team will select the peer utilities so that Xcel Energy has, to the extent practicable, an "apples-to-apples" comparison. In doing this, we will consider such factors as geographic proximity, product implementer, and customer demographics that may affect products at the peer utilities. The interviews will discuss how peer utilities implement their school education products, what measures are included in comparable education kits and what notable successes and challenges they have observed in their products.

Based on our recent experience with utility benchmarking during the 2017 evaluations, we will first work with Xcel Energy to identify an appropriate peer cohort of six utilities for the benchmarking study, as well as the critical product components to be compared. We will then develop a peer utility interview guide that is customized to the desired benchmarking components, to be provided to Xcel Energy for approval prior to beginning any data collection. Finally, we will summarize the results of our benchmarking analysis in a summary within the final evaluation report.

A.2 Sampling Design

Xcel Energy provided the evaluation team with a database of information on teachers who participated in the School Education Kits product and a database of parents whose child received a kit of energy efficiency measures and completed a short (five question) survey about the School Education Kits product. The evaluation team relied on these databases to create the sample frames necessary to develop the sample designs for the teacher and parent surveys.

Sample Design For Teacher Survey

The database of participating teachers provided by Xcel Energy consisted of 265 records. Of these, 251 records included an email address, which was necessary for contacting the randomly selected teachers for the survey.[5] For each of the 251 teacher records in the sample frame, the EMI team appended data from the Colorado Department of Education (CDE) on the number of students attending the school and the number of students at the school receiving free or reduced cost lunch.[6] The evaluation team used the information obtained from CDE to stratify the sample frame of teachers at *public* schools into nine strata based on school size (i.e., number of students) and proportion of students who are on free or reduced cost lunch.[7] The evaluation team also created a tenth stratum for teachers at private schools.[8] Table 2 shows the number of records in each of the ten strata.

Table 2. Stratification of Sample Frame of Participating Teachers

Strata	Number of Students	Percent of Free or Reduced Lunch	Records
1. Small School - Low Free Lunch	Up to 355	Up to 15%	3
2. Small School - Med Free Lunch		16% - 79%	33
3. Small School - High Free Lunch		80% or more	11
4. Mid-Size School - Low Free Lunch	356 - 606	Up to 15%	35
5. Mid-Size School - Med Free Lunch		16% - 79%	72
6. Mid-Size School - High Free Lunch		80% or more	33
7. Large School - Low Free Lunch	607 or more	Up to 15%	8
8. Large School - Med Free Lunch		16% - 79%	34
9. Large School - High Free Lunch		80% or more	4
10. Private Schools	NA	NA	18
		Total Records	**251**

In stratifying the sample frame of (public) school teachers, the evaluation team binned teachers into three categories based on school size and three categories based on the proportion of students on free or reduced cost lunch. Small schools consisted of the 20% of teachers in the smallest schools; Large schools consisted of the 20% of teachers in the largest schools; and Mid-size schools consisted of the remaining (60%) of teachers. Likewise, for proportion of students on reduced or free lunch, Low Free Lunch schools consisted of the 20% of teachers in the schools with the smallest proportion of students on free or reduced lunch; High Free Lunch schools consisted of the 20% of teachers in schools with the highest proportion of students on free or reduced lunch; and

[5] In fact, there were seven records without an email address and seven records with a duplicate email address (265 – 7 – 7 = 251 records with a unique email address.
[6] Pupil count data downloaded from https://www.cde.state.co.us/cdereval/pupilcurrentschool on April 17, 2018.
[7] The proportion of students on free or reduced-cost lunch serves as a proxy for the percent of families with children attending the school who are low income.
[8] The CDE data on student counts by school and number of students receiving free or reduced lunch did not include private schools.

Medium Free Lunch schools consisted of the remaining (60%) of teachers. Each public school teacher was then assigned to a strata based on their size and proportion-free-lunch bins.

The evaluation team's stratified teachers based on these two school characteristics in order to ensure that the sample included sufficient representation—not proportional representation—of teachers in schools with a high proportion of students from both low income and higher income families, as well as teachers from small and large schools. In soliciting teachers to participate in the survey, the evaluation team focused our efforts on the "extreme" strata (i.e., small and large schools; low and high rates of free or reduced lunch).

Sample Design For Parent Survey

The database of parents provided by Xcel Energy consisted of 2,449 records for parents who indicated they would be willing to participate in a survey about the School Education Kits product. Of these, 1,371 records included a complete email address, which was necessary for contacting the parents randomly selected for the survey. These 1,371 records constituted the sample frame used by the evaluation team for the parent survey. For each parent record, we identified the school their child attended and assigned the parent record to the same strata that their child's teacher was assigned (see Sample Design For Teacher Survey above). Table 3 shows the number of records in each of the ten strata for the parent sample frame.

Table 3. Stratification of Sample Frame of Participating Teachers

Strata	Number of Students	Percent of Free or Reduced Lunch	Records
1. Small School - Low Free Lunch	Up to 355	Up to 15%	24
2. Small School - Med Free Lunch		16% - 79%	93
3. Small School - High Free Lunch		80% or more	61
4. Mid-Size School - Low Free Lunch	356 - 606	Up to 15%	147
5. Mid-Size School - Med Free Lunch		16% - 79%	372
6. Mid-Size School - High Free Lunch		80% or more	81
7. Large School - Low Free Lunch	607 or more	Up to 15%	87
8. Large School - Med Free Lunch		16% - 79%	176
9. Large School - High Free Lunch		80% or more	47
10. Private Schools	NA	NA	276
		Total Records	**1,364**

The evaluation team's stratified parents based on these two school characteristics in order to increase the likelihood that the sample included lower- and higher-income families and families living in smaller and larger communities.

A.3 Benchmark Scoping Memorandum

To support the process and impact evaluation of the 2017 Xcel Energy energy efficiency products, the EMI Consulting evaluation team will benchmark the Xcel Energy products against peer utilities. The objective of the peer utility benchmarking task is to gather information on comparable school education kit products operated by other utilities. Specifically, the interviews will be conducted with product managers of these products to understand how their product is structured, the relative importance of the school kits product within their portfolio of residential energy efficiency products, successes and challenges of the product, recommendations they have received and implemented, and recent changes they have made or expect to make to the product.

The evaluation team will interview product managers from six peer utilities that have comparable products to Xcel Energy's School Education Kits Product. In doing this, the evaluation team will consider such factors as geographic proximity, product implementer, and customer demographics that may affect school kit products at the peer utilities. Table 4 below lists the targeted utilities and their corresponding products, along with two additional utility products that will serve as alternates in the event we are unable to obtain the necessary information from any of the first six utilities. Table 5 identifies the interview questions related to each contextual theme.

Table 4: Peer Utilities and Programs

Utility	Program Name	Reason for Inclusion
Ameren Illinois	Student Energy Education Kits	Geographic proximity w/ school kit program
NIPSCO	Energy Efficiency Education Program	Geographic proximity w/ school kit program
Duke Energy	My Energy Kit Challenge	Similar school kit program with different implementer
Black Hills Energy (CO)	Living Wise School Program	Geographic proximity w/ school kit program
Consumers Energy	Energy Efficiency Education	Geographic proximity w/ school kit program
ConEdison Inc.	Smart Kids Energy Efficiency Program	Similar school kit program
Indianapolis Electric and Light (IPL)	School Energy Education Program	Geographic proximity w/ school kit program
PPL Electric Utilities	Energy Efficiency Kit and Education Program	Similar school kit program with different implementer

Table 5. Mapping of Interview Questions to Contextual Themes

Contextual Themes	Interview Question
Program design and measures	1-6
Savings and net-to-gross (NTG) approach	7-14
Program participation and tracking	15-19
Program successes, challenges, and recent changes	20-23

Recruiting Instructions

The research team plans to send advance emails to any program managers with available emails. The email will contain an explanation of the research, as well as both an Xcel Energy and EMI Consulting evaluation team contact person the utility can reach out to if they have additional questions or would like to schedule an interview at their convenience.

Potential respondents will be recruited by consultants on the research team who will be conducting interviews and have been trained on the purpose and goals of the School Education Kits program research. The research team will be as flexible as possible in scheduling these interviews, including scheduling early morning or evening interviews when possible to accommodate busy utility schedules. The research team will leave a voicemail or receptionist message on the first attempt whenever possible, and then use discretion to determine any additional messages left on subsequent attempts. The research team will strive to attempt to contact each peer utility a minimum of 4 times before giving up on that particular contact. However, depending on each unique situation, the research team may need to attempt some contacts more times to ultimately reach the correct person.

A.4 NTGR Approach

The purpose of the NTG analysis is to estimate the NTGR—the percent of savings reported for the School Education Kits product that can be attributed to the actions of the product, such as the educational materials provided to teachers and the measures in the kits given to the students. The NTGR is comprised of two estimated metrics: free-ridership and spillover, which are described below.[9] To develop estimates of these two metrics, the evaluation team used participant (parent) self-report survey results. The methodological approach was based on the Residential and Low Income Sector Protocols in the *Illinois Statewide Technical Reference Manual for Energy Efficiency Version 6.0* (in *Attachment A: Illinois Statewide Net-to-Gross Methodologies)*. The evaluation team customized this

[9] In some instances, the NTG ratio may also include a third metric, market effects. However, the evaluation team does not believe that the School Education Kits program includes measurable market effects.

approach to better match the questions and algorithms to the Xcel Energy School Education Kits product and supplemented the approach with additional contextual input from the participating teacher survey and in-depth interview results.

The evaluation team calculated the NTGR using the formula:

$$NTGR = (1 - \text{free-ridership rate} + \text{participant spillover rate})$$

The NTGR algorithm draws from responses by parents of participating students to a battery of self-report questions designed to determine product-related free-ridership and spillover. These questions inquired about the parent's degree of awareness of the measures included in the Take Action Kits and whether such measures were installed in the home prior to their child bringing home the kit. The questions also targeted the level of influence various aspects of the product—such as the educational material, teacher and student encouragement, and contact with Xcel Energy—had on the households' decision to install the energy efficiency equipment included in the Take Action Kits. In addition, the survey instrument included questions to identify whether the School Education Kits product led to the purchase and installation of other energy efficiency measures (i.e., spillover).

Free-Ridership

The free-ridership estimate represents the percent of savings that would have occurred in absence of product intervention. Free-ridership is assessed on a scale from 0 to 1, where 1 indicates that the product had 100% free-ridership and all product savings would have occurred without any of the product's rebates or assistance.

To determine free-ridership, the evaluation team started with the Residential and Low-Income Sector Protocol from the Illinois Technical Resource Manual (TRM)and adjusted the process to accurately estimate free-ridership for the unique structure of the School Education Kits product. In addition, the participant is the parent of the student who received the kit and may be only marginally knowledgeable about the kits.

The estimation of free-ridership included two primary factors:

1. A Product Influence score, based on the participant's perception of the level of influence various product components such as the educational material, teacher encouragement, child encouragement, and Xcel Energy in general had on their decision to install the Take Action Kit measures, focusing specifically on the LED lighting.
2. A No-Product score, based on the participant's response to the counterfactual question regarding what their household would have done had their child not brought home the Take Action Kit.

The Product Influence score was calculated using a Part 1 and Part 2 scoring algorithm based on survey responses to five individual questions. Part 1 consisted of the first four questions asking participants to estimate the level of influence across four primary product components using a scale of 0 to 10 where 0 was "not at all influential" and 10 was "extremely influential." The maximum score across the four product factors was used as Part 1 in the Product Influence scoring. These four product components included:

1. Educational material the child brought home;
2. Encouragement the household or child receive from their teacher;
3. Contact the household may have had with Xcel Energy; and
4. Encouragement from the child.

Part 2 of the Product Influence score consisted of household survey responses to the level of influence across all the product factors combined on the same 0 to 10 scale. The combined Product Influence score was then calculated using the average of the Part 1 and Part 2 scoring.

The No-Product score was estimated using the participant survey responses to the counterfactual question targeting what the households would have done in the absence of the product and applying a 0 to 10 scoring system similar to the Product Influence Score. Specifically, the evaluation team asked participants whether they would have purchased and installed about the same number of LED bulbs at about the same time (0), purchased and installed about the same number of LEDs within a year (3), purchased and installed about the same number of LEDs within one to two years (3), purchased and installed LED bulbs as existing bulbs burned out (7), or would not have purchased and installed any LED bulbs at that time or within the next couple of years (10).

The evaluation team then used the average score across the Product Influence and No-Product scores to estimate a final free-ridership value for each participating household.

Participant Spillover

The spillover metric represents additional savings achieved as a result of product activities, outside of rebated measure savings, by product participants. Such savings are not directly captured in the product's claimed energy savings. For the Xcel Energy School Education Kits product, the evaluation team incorporated two measure attribution scores for the spillover estimation. Each of these scores is computed from participating household responses to survey questions. Each question asked participants (parent of the student who received the kit) to choose a value on a scale from 0 to 10 where 0 indicates no influence and 10 indicates highest influence.

The first question (measure attribution score #1) asked about the influence the School Education Kits product had on the purchase of any additional energy efficiency measures the participant acquired subsequent to their student receiving the Take Action Kit. The survey instrument then iterated through each additional energy efficiency measure the participant reported purchasing.

The second question (measure attribution score #2) asked about likely actions the participant would have taken in the absence of product participation. Again, the survey instrument iterated through each additional energy efficiency measure the participant reported purchasing.

The spillover score was then computed using the formula shown below. A spillover score must be greater than five in order for the additional measure to qualify for spillover. When this criterion is met, the savings are added to product attributable savings.

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

The questions asked in the parent survey and the approach to analyzing the responses to the questions is heavily influenced by the self-report approach (SRA) specified in the 2016 Illinois Statewide Technical Reference Manual for Energy Efficiency[10] and draws on recommended survey questions specified therein. The SRA involves contacting a sample of participant decision-makers and asking them a series of closed- and open-ended questions about their actions and motivations related to installing energy efficiency equipment. The evaluation team modified certain aspects of this approach to account for the fact that participants receive the measures proactively from Xcel Energy, not by customer request.

[10] Specifically, we will be drawing from Version 6.0: Volume 4: Cross-Cutting Measures and Attachments: Attachment A.

APPENDIX B: DATA COLLECTION DOCUMENTS

B.1 Participant Household Web Survey Guide

Measure Persistence

Thank you for participating in our parent survey as part of our research for Xcel Energy's School Education Kits product. Your input will help Xcel Energy improve their energy efficiency programs going forward.

Measure Persistence

To start, we have a few questions about the energy efficiency items that were included in the Xcel Energy kit. Specifically, the questions will focus on the following kit items:

- 6 LED bulbs
- Kitchen aerator
- Bathroom aerator
- Low-flow showerhead

1. The kit your household received contained four 9-Watt LED light bulbs and two 11-watt LED light bulbs. Of the six LED bulbs, how many are currently installed in your home?
    a. 0
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5
    g. 6
    h. Don't know

2. [If Q1<6 and Q1≠0] Did you initially install more of the LED bulbs and then later remove them?
    a. Yes
    b. No
    c. Don't know

3. [If Q2=yes] Why did you choose to remove the LED bulbs? Please select all that apply.
    a. Did not like the light output of the bulb
    b. Did not like the overall quality of the bulb
    c. The bulb began to decrease in quality over time
    d. The bulb burned out
    e. The bulb did not fit in the desired fixture
    f. Your household did not see any energy savings while using the bulb
    g. Other (Please specify:_____)

4. [If Q1=0] Why did you decide to not install any of the LED bulbs?
    a. Did not like the light output of the LED bulbs
    b. Did not like the overall quality of the LED bulbs
    c. Did not need to replace any of the existing bulbs
    d. Already had LED bulbs installed
    e. The bulb did not fit in the desired fixture
    f. Your household did not anticipate any energy savings from the LED bulbs
    g. Other (Please specify:_____)

5. Have you ever received or purchased an LED bulb through another Xcel Energy conservation program?
    a. Yes (Please provide details about your purchase:_____)
    b. No
    c. Don't know
    d. Don't remember

6. The energy efficiency kit your household received also contained a high-efficiency showerhead to help reduce your water use. Did you install the high-efficiency showerhead in your home?
    a. Yes
    b. No
    c. Don't know
    d. Don't remember

7. [If Q6=yes] And do you still currently have the high-efficiency showerhead installed?
    a. Yes
    b. No
    c. Don't know

8. [If Q7=No] Why did you choose to remove the high-efficiency showerhead? Please select all that apply.
    a. Broke/stopped working
    b. Did not fit shower properly
    c. Did not include preferred features
    d. Did not like the style/looks
    e. Did not like the quality of the showerhead
    f. Water pressure was too low
    g. Did not observe any energy savings
    h. Other (Please describe:_____)

9. [If Q6=No] Why did you choose to not install the high-efficiency showerhead? Please select all that apply.
    a. Did not fit shower properly
    b. Did not include preferred features
    c. Did not like the style/looks/quality
    d. Do not remember receiving the showerhead
    e. Gave the showerhead to another household
    f. Already had a high-efficient showerhead installed

g. Preferred current showerhead
h. Too difficult to install
i. Other (Please describe:_____)

10. Have you ever received or purchased a high-efficiency showerhead through another Xcel Energy conservation program?
    a. Yes (Please provide details about your purchase:_____)
    b. No
    c. Don't know
    d. Don't remember

11. The energy efficiency kit also included two faucet aerators for your sinks, one for the bathroom and one for your kitchen. Did you install a faucet aerator on your kitchen sink?
    a. Yes
    b. No
    c. Don't know
    d. Don't remember

12. [If Q11=yes] And is the faucet aerator still installed on your kitchen sink?
    a. Yes
    b. No
    c. Don't know

13. [If Q12=No] Why did you decide to remove the kitchen faucet aerator? Please select all that apply.
    a. Broke/stopped working
    b. Did not fit in the faucet properly
    c. Did not know how to use it
    d. Did not like the way it looked
    e. Installed incorrectly
    f. Water pressure was too low
    g. Did not observe any energy savings on bill
    h. Other (Please describe:_____)

14. [If Q11=No] Why did you choose to not install the kitchen faucet aerator? Please select all that apply.
    a. Could not install because it did not fit properly
    b. Did not have time to install
    c. Do not recall receiving the faucet aerator
    d. Did not like the look or quality of the faucet aerator
    e. Too difficult to install
    f. Already had a faucet aerator installed in my kitchen
    g. Preferred current faucet aerator in kitchen
    h. Other (Please describe:_____)

15. Did you install a faucet aerator on your bathroom sink?
    a. Yes
    b. No
    c. Don't know
    d. Don't remember

16. [If Q15=yes] And is the faucet aerator still installed on your bathroom sink?
    a. Yes
    b. No
    c. Don't know

17. [If Q16=No] Why did you decide to remove the bathroom faucet aerator? Please select all that apply.
    a. Broke/stopped working
    b. Did not fit in the faucet properly
    c. Did not know how to use it
    d. Did not like the way it looked
    e. Installed incorrectly
    f. Water pressure was too low
    g. Did not observe any energy savings on bill
    h. Other (Please describe:_____)

18. [If Q15=No] Why did you choose to not install the bathroom faucet aerator? Please select all that apply.
    a. Could not install because it did not fit properly
    b. Did not have time to install
    c. Do not recall receiving the faucet aerator
    d. Did not like the look or quality of the faucet aerator
    e. Too difficult to install
    f. Already had a faucet aerator installed in my kitchen
    g. Preferred current faucet aerator in kitchen
    h. Other (Please describe:_____)

19. Have you ever received or purchased a faucet aerator through another Xcel Energy conservation program?
    a. Yes (Please provide details about your purchase:_____)
    b. No
    c. Don't know
    d. Don't remember

Spillover

Next, I'd like to ask you about other types of energy efficiency equipment you may have purchased since receiving the Home Energy Kit from Xcel Energy.

20. Since receiving the Home Energy Kit, have you purchased or received any other energy efficient equipment or services for your home that did not receive a rebate?
    a. Yes
    b. No
    c. Don't know
    d. Don't remember

21. [If Q20=yes] Please select the types of energy efficient equipment you have purchased since receiving the Home Energy Kit and the quantity of each selected equipment.

    [All options listed with a quantity option provided]

    a. Additional LED light bulbs
    b. Additional faucet aerators
    c. Additional high-efficiency showerhead
    d. Energy efficient AC
    e. Energy efficient clothes washers
    f. Energy efficient clothes dryers
    g. Energy efficient furnace
    h. Energy efficient heat pump
    i. Energy efficient refrigerator
    j. Smart/programmable thermostat
    k. Energy efficient windows
    l. Energy efficient doors
    m. Air sealing improvements
    n. Energy efficient ceiling fan motors
    o. Other ENERGY STAR appliances (Please describe:_____)
    p. Other (Please describe:_____)

22. [For all Q21 selections] Which of the following statements best describes how receiving the School Energy Kit influenced your decision to install [efficiency measures]?
    a. Receiving the School Energy Kit had no influence on my household's decision to install [efficiency measure] and we would have installed the installed the equipment even without receiving the kit
    b. Receiving the School Energy Kit had a little influence on my household's decision to install [efficiency measure] but we probably would have installed the equipment even without receiving the kit
    c. Receiving the School Energy Kit had some influence on my household's decision to install [efficiency measure] and we may not have installed the equipment had we not received the kit
    d. Receiving the School Energy Kit had a significant influence on my household's decision to install [efficiency measure] and we most likely would not have installed the equipment had we not received the kit

23. [For all Q21 selections] On a scale from 1 to 5, where 1 is not at all influential and 5 is extremely influential, how influential was the Xcel Energy School Education Kits Program in installing [Q21 response]?
    a. 1 – Not at all influential
    b. 2
    c. 3
    d. 4
    e. 5 – Extremely influential
    f. Don't know

24. [For all Q25 selections] In your own words, what is the main reason you installed [efficiency measure]?
    a. [Record free response]

Free Ridership

25. ***Before*** receiving the School Energy Kit, do you recall receiving any rebates from Xcel Energy for making energy efficiency upgrades at your home?
    a. Yes
    b. No
    c. Don't know

26. [If Q29=yes] For what efficiency upgrades did you receive a rebate from Xcel Energy?
    a. [Record free response]

27. How influential was the educational materials your child brought home in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential and 10 means "very influential."
    a. 0) not at all influential
    b. ...
    c. 10) extremely influential
    d. DON'T KNOW

28. How influential was encouragement you or your child received from their teacher in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential and 10 means "very influential."
    a. 0) not at all influential
    b. ...
    c. 10) extremely influential
    d. DON'T KNOW

29. How influential was any contact you have had with Xcel Energy in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "very influential."]

    a. 0) not at all influential
    b. ...
    c. 10) extremely influential
    d. DON'T KNOW

30. How influential was encouragement from your child in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential and 10 means "very influential."

    a. 0) not at all influential
    b. ...
    c. 10) extremely influential
    d. DON'T KNOW

31. [If Q1>0 or Q1=0 and Q2=Yes] Thinking about all four of these potential influences together, how influential were they collectively on your decision to install the LED bulbs included in the kit your child brought home? Again, please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "very influential."

    a. 0) not at all influential
    b. ...
    c. 10) very influential
    d. DON'T KNOW

32. Which statement best describes your actions had your child not brought home the school energy education kit... [REVIEWER NOTE: FOR ANALYSIS, WE WILL APPLY VALUES OF 0, 3, 7, AND 10 TO ITEMS 1, 2, 3, AND 4 BELOW]
    a. 1. I would have purchased and installed about the same number of LED bulbs at about the same time.
    b. 2. I would have purchased and installed about the same number of LED bulbs within a year.
    c. 3. I would have purchased and installed about the same number of LED bulbs in one to two years.
    d. 4. I would purchase and install LED bulbs as existing bulbs burned out
    e. 5. I would not have purchased and installed any LED bulbs at that time or within the next couple years.

33. Before receiving the School Energy Kit, did you have any LED bulbs installed in your home?
    a. Yes
    b. No
    c. Don't know

34. [If Q33=yes] Approximately how many LEDs are currently installed in your home?
    a. [Record quantity]

35. [If Q33=yes] Approximately when did you purchase and install your very first LED bulb?
    a. [Record month/year]

Program Experience and Satisfaction

Now, we have a few questions about your overall experience and level of satisfaction with the Xcel Energy School Education Kits Program.

36. Since your household participated in the program, how often do you and your family talk about saving energy around the house?
    a. Never
    b. Rarely (once or twice a year)
    c. Sometimes (a few times a year)
    d. Frequently (about once a month)
    e. All the time (once a week or more)

37. How has the frequency of these conversations changed since participating in the program?
    a. The number of conversations about saving energy has increased
    b. The number of conversations about saving energy has decreased
    c. The number of conversations about saving energy has remained about the same
    d. Don't know

38. And since your participation, what benefits, if any, have you observed in your household as a result of the School Education Kits Program? Please select all the apply.
    a. None
    b. Increased overall awareness regarding household energy usage
    c. Increased overall number of energy saving activities
    d. Observed a lower energy bill as a result of lower energy usage
    e. Learned about new energy efficiency items
    f. Don't know

39. Now, using a scale from 1 to 5, where 1 is not at all satisfied and 5 is extremely satisfied, how satisfied are you with the following aspects of the Xcel Energy School Education Kits Program?

[Matrix question with options and 1-5 scale provided for each]

    a. The School Education Kits Program overall
    b. The household activities you completed as part of the program
    c. The installation requirements for the equipment types included in the School Education Kit
    d. The LED bulbs provided in the School Education Kit
    e. The high-efficiency showerhead provided in the School Education Kit
    f. The faucet aerators provided in the School Education Kit
    g. The other upgrades provided in the School Education Kit (filter whistle, LED night light, toilet leak tablets)

Household Characteristics

Lastly, I just have a few questions about your home.

40. Which of the following best describes the type of home you currently live in?
    a. Single family, detached home
    b. Single family, manufactured or mobile home
    c. Apartment
    d. Condominium
    e. Duplex, triplex, four-plex
    f. Other (Please describe:_____)

41. Do you own or rent your home?
    a. Own
    b. Rent
    c. Don't know

42. How many showers does your household have?
    a. [Record quantity]

43. How many bathroom and kitchen sinks does your household have?
    a. [Record quantity]

44. How many people live in your household full-time?
    a. [Record quantity]

45. That is all the questions we have. Do you have any comments that you think would help improve the Xcel Energy School Education Kits Program going forward?
    a. [Record open response]

Thank you very much for completing the School Education Kit Program Parent Web Survey! Your responses will help Xcel Energy continue to improve its household energy efficiency programs going forward.

B.2 Participating Teacher Web Survey Guide

To support the process and impact evaluation of the 2017 Xcel Energy energy efficiency programs, the evaluation team conducted surveys with teachers that participated in the Colorado School Education Kits Program. The CO School Education Kits Program encourages energy savings through educational materials and direct install measures provided to 5th and 6th grade students whose teachers enroll in the program. Students participate in classroom activities and bring home kits containing energy efficiency measures to install in their homes. The kits include a variety of direct install measures such as LED bulbs, an LED nightlight, a kitchen aerator, a bathroom aerator and a Low Flow Showerhead, which are distributed by an implementation firm, AM Conservation.

Evaluation Objectives

Based on the project kick-off meeting, program review and staff interviews, the evaluation team identified the following key topics and research questions to highlight in the process evaluation tasks including the parent and teacher surveys:

- What are the backgrounds for participating teachers, including experience, primary subjects they teach, and their existing views on energy efficiency?
- How well does the educational curriculum material in the Program Kits mesh with existing energy curriculum and how do teachers incorporate the material into lesson plans?
- What parts of the program do students engage with the most and how can the material be improved to better fit the needs of households?
- What aspects of the Program Kits are households installing most frequently and what measures are most useful for households?
- How satisfied are teachers and parents with the program and what suggestions – including adjustments to the curriculum and/or the measures included in the kit – do both parties have for improving the program going forward?
- How familiar are parents with the energy efficiency measures included in the kits and to what extent were these measures installed in the home prior to receiving the kit?[11]
- How has their experience with the kits, the educational materials provided to their child, and their child's experience with the classroom and related activities influenced them to install additional energy efficiency measures in their home?

Research Question	Survey Question Number(s)
What are the backgrounds for participating teachers, including experience, primary subjects they teach, and their existing views on energy efficiency?	1-6
How well does the educational curriculum material in the Program Kits mesh with existing energy curriculum and how do teachers incorporate the material into lesson plans?	7-17
What parts of the program do students engage with the most and how can the material be improved to better fit the needs of households?	18-20, 22
What aspects of the Program Kits are households installing most frequently and what measures are most useful for households?	n/a; participant data
How satisfied are teachers and parents with the program and what suggestions – including adjustments to the curriculum and/or the measures included in the kit – do both parties have for improving the program going forward?	21, 23-33
How familiar are parents with the energy efficiency measures included in the kits and to what extent were these measures installed in the home prior to receiving the kit?	n/a; parent web survey
How has their experience with the kits, the educational materials provided to their child, and their child's experience with the classroom and related activities influenced them to install additional energy efficiency measures in their home?	n/a; parent web survey

Fielding Instructions

The evaluation team administered the participating teacher web survey using the online platform Qualtrics. For recruitment, the evaluation team will distribute individual links to the web survey via email to a randomly selected sample of participating teachers. The evaluation team proposed to complete 150 surveys across the random sample selected from 1,104 teachers that participated in the CO School Education Kits Program in 2017 and completed 159 total surveys. Those that complete the web survey will receive a $25 incentive and be automatically entered to win one of three $100 incentives.

Thank you for participating in our teacher survey as part of our research for Xcel Energy's School Education kits Program. Your input will help Xcel Energy improve their energy efficiency programs going forward.

To start, we'd like to ask a few questions about your experience as a teacher and your current school

1. How many years have you been a teacher, either at your current school or some other school?
    a. Less than 2 years
    b. 2-5 years
    c. 6-10 years
    d. 11-20 years
    e. More than 20 years

2. What are the primary subjects you currently teach? (Select all that apply)
    a. Science
    b. Math
    c. English
    d. Social Studies
    e. All of the above
    f. Other (Please specify)_____

3. What grades are you teaching this school year?
    a. Kindergarten
    b. 1st grade
    c. 2nd grade
    d. 3rd grade
    e. 4th grade
    f. 5th grade
    g. 6th grade
    h. 7th grade
    i. 8th grade
    j. Other (please specify)_____

4. Which of the following best describes your present school setting?
    a. Urban
    b. Suburban
    c. Rural
    d. Other (please specify)_____

5. In general, using a 1 to 5 scale where 1 is not at all important and 5 is extremely important, how important is energy efficiency and reducing your own individual energy consumption?

    a. 1 – Not at all important
    b. 2 – Not very important
    c. 3 – Somewhat important
    d. 4 – Very important
    e. 5 – Extremely important

6. How did you first learn about the Xcel Energy School Education Program? (Please select one response)
    a. Xcel Energy website
    b. Mailing
    c. E-mail
    d. Phone call from program staff (AM Conservation Group or National Energy Foundation (NEF))
    e. Referral from another teacher
    f. Referral from principal or administrator
    g. Other _____

7. What were the most important reasons you signed up for the Xcel Energy School Education Program? Please select up to five responses.
    a. Curriculum fit with existing lesson plans
    b. The products in the kit provided to students and families
    c. Energy savings for students and families
    d. Financial savings on utility bills for students and families
    e. Opportunity to teach students about energy efficiency
    f. Participated in a similar energy education in the past
    g. Recommended by teacher, principal, or other administrator
    h. Adopted by school and/or fellow teachers
    i. Promotes energy saving behavior both in and out of the classroom
    j. Other _____

8. [Carry forward Q7 responses] Now, please rank those reasons in order of importance, with 1 being the most important reason.

9. Did you have energy conservation content included in your lesson plans before you initially decided to participate in the Xcel Energy School Education Program?
    a. Yes
    b. No
    c. Don't recall

10. [If Q9 = "Yes"] Prior to participating in the Xcel Energy School Education Program, how did energy conservation fit into your curriculum? Did you teach it as ….?
    a. A separate unit
    b. One subject area within a larger unit
    c. Activities or exercises that fit into many units throughout the duration of the class
    d. Separate activities or exercises that are used in between units or as a break from the main unit
    e. Other (Please describe)_____

11. [If Q9 = "Yes"] Did the Xcel Energy School Education Program impact how energy conservation fit into your curriculum?
    a. Yes
    b. No
    c. Don't know

12. [If Q11 = "Yes"] Please describe any changes that occurred:_____

13. Select the statement that best describes your use of the program lesson plans and classroom activities.

    a. I used all or most of the lesson plans and classroom activities provided
    b. I used all or most of the lesson plans, but not so much of the classroom activities
    c. I used all or most of the classroom activities, but not so much of the lesson plans
    d. I did not use very much of the lesson plans or the classroom activities.

14. [If Q13 = c or d] Which lesson plans did you not use from the Teacher Guide? For each selected answer, please check the box and provide a brief description why you did not use.
    a. Natural Resources: _____
    b. Energy Transformations: _____
    c. Electricity and Circuits: _____
    d. Natural Gas: _____
    e. Water: _____
    f. Energy Efficiency: _____

15. About how long would you say you spent teaching the Xcel Energy program curriculum to your students and completing the classroom activities?
    a. Less than one day
    b. One to three days
    c. Four to five days
    d. Five to ten days
    e. More than two weeks
    f. Don't recall

16. Did you share any of the program lesson plans/classroom activities with your fellow teachers that were not already participating in the Xcel Energy School Education Program?
    a. Yes
    b. No
    c. Don't know

17. On a scale of 1 to 5 where 1 is not at all well and 5 is extremely well, how well do you think the program's lesson plans fit with Colorado's curriculum standards?

    a. 1 – Not at all well
    b. 2 – Not very well
    c. 3 – Somewhat well
    d. 4 – Very well
    e. 5 – Extremely well

18. On a scale of 1 to 5, where 1 means completely disagree and 5 means completely agree, to what extent do you agree or disagree with each of the following statements:
    a. "My students understood the lessons/curriculum provided in the School Education Kit program"
    b. "My students were engaged in the lessons"
    c. "My students demonstrated a better understanding of energy efficiency topics following the lessons"

    a. 1 – Completely disagree
    b. 2 – Somewhat disagree
    c. 3 – Neither agree nor disagree
    d. 4 – Somewhat agree
    e. 5 – Completely agree

19. How engaging did your students find the following elements of the School Education Program?
    a. The program lessons/classroom activities
    b. The energy efficiency kit products
    c. Installing the kit items at home with their families
    d. Filling out the student surveys
    e. The glow-in-the-dark wristbands
    f. Leaning about energy efficiency
    g. Other _____

    a. 1 – Not at all engaging
    b. 2 – Not very engaging
    c. 3 – Somewhat engaging
    d. 4 – Very engaging
    e. 5 – Extremely engaging

20. How helpful would the following tools be in assisting you to incorporate the program content into your existing lesson plans?
    a. An online teacher portal to ask questions, download assignments and information, and upload worksheets completed by students.
    b. A telephone help line to answer questions related to the program
    c. In-person program training (i.e., one-day seminar)
    d. Program training through a webinar
    e. Other _____

    a. 1 – Not at all helpful
    b. 2 – Not very helpful
    c. 3 – Somewhat helpful
    d. 4 – Very helpful
    e. 5 – Extremely helpful

21. How beneficial were each of the following aspects of the Xcel Energy School Education Program?
    a. The content of the curriculum/teacher materials
    b. The workbooks and posters provided to teachers
    c. The energy-efficiency kits for students
    d. The $25 gift card for enrolling
    e. The $25 gift card for returning student survey data
    f. Other _____

a. 1 – Not at all beneficial
b. 2 – Not very beneficial
c. 3 – Somewhat beneficial
d. 4 – Very beneficial
e. 5 – Extremely beneficial

22. Did you make the student surveys required homework for your students?
    a. Yes
    b. No
    c. Don't remember

23. Did you receive 80% or more of the student surveys back from your class?
    a. Yes
    b. No
    c. Don't remember

24. What suggestions, if any, do you have for Xcel Energy to help encourage students to return their student surveys?

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25. Did you mail back all of the student surveys that you received?
    a. Yes
    b. No
    c. Don't remember

26. *[If Q25= b]* Why not?

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27. *[If Q25= a]* Did you mail back 80% or more of your classroom's student surveys, qualifying you for the $25 gift card?
    a. Yes
    b. No
    c. Don't remember

28. *[If Q27= b]* Why not?

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29. On a scale of 1 to 5, where 1 is not at all likely and 5 is extremely likely, how likely would you be to recommend the Xcel Energy School Education Program to other teachers?
    a. 1 – Not at all likely
    b. 2 – Not very likely
    c. 3 – Somewhat likely
    d. 4 – Very likely
    e. 5 – Extremely likely

30. On a scale of 1 to 5 where 1 is not at all satisfied and 5 is extremely satisfied, how satisfied are you with the following parts of the Xcel Energy School Education Program?
    a. Educational curriculum material provided by Xcel Energy
    b. Measures provided to students in the Xcel Energy School Education Program Kits
    c. Student worksheet
    d. Enrollment process for participating teachers
    e. Interactions with Xcel Energy program staff
    f. Participation incentive amount
    g. Xcel Energy School Education Program overall

    a. 1 – Not at all satisfied
    b. 2 – Not very satisfied
    c. 3 – Somewhat satisfied
    d. 4 – Very satisfied
    e. 5 – Extremely satisfied

31. What suggestions, if any, do you have for improving the Xcel Energy School Education Program?

32. Are there any household energy efficiency items that are not currently offered in the Xcel Energy School Education Program Kit that you think would be useful to include?

    a. Equipment type 1: _____
    b. Equipment type 2: _____
    c. Equipment type 3: _____
    d. Equipment type 4: _____

Thank you for completing the Xcel Energy School Education Program Teacher Survey!

Lastly, please enter your full name and email below so we can send you the $25 gift card for assisting in our research. As a reminder, you will also be entered into our raffle for a chance to win one of two $100 gift cards.

B.3 Participating Teacher In-depth Interview Guide

To support the process and impact evaluation of the 2017 Xcel Energy energy efficiency programs, the evaluation team conducted follow up in-depth interviews with teachers that participated in the Colorado School Education Kits Program and completed the teacher web survey as part of the evaluation. The CO School Education Kits Program encourages energy savings through educational materials and direct install measures provided to 5th and 6th grade students whose teachers enroll in the program. Students participate in classroom activities and bring home kits containing energy efficiency measures to install in their homes. The kits include a variety of direct install measures such as LED bulbs, an LED nightlight, a kitchen aerator, a bathroom aerator and a Low Flow Showerhead, which are distributed by an implementation firm, AM Conservation.

Evaluation Objectives

Based on the project kick-off meeting, program review and staff interviews, the evaluation team identified the following key topics and research questions to highlight in the process evaluation tasks including the parent and teacher surveys and the follow up teacher interviews:

- What are the backgrounds for participating teachers, including experience, primary subjects they teach, and their existing views on energy efficiency?
- How well does the educational curriculum material in the Program Kits mesh with existing energy curriculum and how do teachers incorporate the material into lesson plans?
- What parts of the program do students engage with the most and how can the material be improved to better fit the needs of households?
- What aspects of the Program Kits are households installing most frequently and what measures are most useful for households?
- How satisfied are teachers and parents with the program and what suggestions – including adjustments to the curriculum and/or the measures included in the kit – do both parties have for improving the program going forward?
- How familiar are parents with the energy efficiency measures included in the kits and to what extent were these measures installed in the home prior to receiving the kit?[12]
- How has their experience with the kits, the educational materials provided to their child, and their child's experience with the classroom and related activities influenced them to install additional energy efficiency measures in their home?

Fielding Instructions

The evaluation team completed 13 (target of 12) in-depth interviews with participating teachers that completed the web survey as part of the evaluation (n=150). For recruitment, the evaluation team began emailing a randomly selected sample of participating teachers using the same contact information used during the teacher web survey recruitment. The evaluation team also attempted to call the participating teachers to try and schedule a time for the interview. Those that complete the follow up interview will receive a $25 incentive and be automatically entered to win a $100 incentive.

Thank you for agreeing to participate in our follow-up interviews as part of our research for Xcel Energy's School Education Kits Program. We know you recently completed the online teacher web survey as well and your input will help Xcel Energy improve their energy efficiency programs going forward.

To start, I'd like to ask a few questions about your experience as a participating teacher in the Xcel Energy School Education Kits Program

1. How many years have you participated in the School Kits program?

2. And do you plan to continue participating in the School Kits program going forward?

    a. Why or why not?

3. During the web survey, you mentioned that you first learned about the School Kits Program by [Q9 web survey response]. Is that your preferred way to learn about new program opportunities?
    a. [If no] How would you prefer to receive information from Xcel Energy about energy saving opportunities?
    b. If changes were made to the School Kits Program, what would be the best way for Xcel Energy to contact you regarding the changes? [Probe on phone call, email, mailing, AM conservation outreach, etc.]

4. Have you ever referred another colleague to participate in the School Kits Program?
    a. [If yes] Approximately how many other teachers have you referred and how many actually ended up participating?
    b. [If no] Would you consider referring other colleagues in the future?
        • Why or why not?
    c. [If no] Why have you not referred any other colleagues?

5. During the online web survey, you mentioned that energy efficiency and reducing your own individual energy usage is [Q8 survey response]. Please describe why you feel that way.
    a. [If "very" or "extremely important"] What, if anything, do you do individually to try and promote energy efficiency and reduce your own individual energy usage?

6. In your own words, please describe why you decided to participate in the School Kits Program?

> Next, I have a few questions regarding the educational material provided as part of the School Kits Program.

7. During the web survey, you mentioned that you [Q12 web survey response] have energy conservation content included in your lesson plans before you decided to participate in the School Kits Program.
   a. [If "did have energy conservation content] In what ways did the education material provided as part of the School Kits Program support or replace the existing curriculum content?
   b. [If "did not have energy conservation content"] Why did you previously not have any energy conservation material included in your lesson plans?
   c. [If "did not have energy conservation content"] Were there any challenges you observed trying to integrate the energy conservation material provided as part of the School Kits Program into your classroom teaching environment?
      - Please describe

8. You mentioned during the web survey that you chose to not use [Q17 web survey response] lesson plan(s) from the Teacher Guide. Please describe why you chose not to use.

9. [If Q23 web survey response(s) =1 or 2; for each response] During the web survey, you indicated that you disagreed with the following statement: [Q23 response]. Please describe why you disagree with that statement?
   a. Is there anything specific that you think Xcel Energy can do to help improve this area of the program?

10. [If Q25 web survey response(s) =1 or 2; for each response] During the web survey, you also indicated that the [Q25 response(s)] was/were [Q25 scaled response]. Please describe why you feel this was not engaging for your students?
    a. Is there anything specific that you think Xcel Energy can do to help improve this area of the program and make it more engaging?

11. Overall, do you have any other specific suggestions for improving the educational curriculum to better serve your needs as a teacher?
    a. Please describe.

Now, I have a few questions about the level of influence various parts of the School Kits Program have on your students, including your role in getting them to participate in the program and install the energy efficient equipment provided in the kit. We understand that some of the questions may be difficult to answer with certainty but please provide your best estimate when possible.

12. Prior to distributing the School Kits, how aware do you think the majority of your students were regarding the types of energy efficiency equipment provided in the kits? [if needed: LEDs, faucet aerators, energy efficient showerheads] Please use a scale from 0 to 10 where 0 means "not at all aware" and 10 means "extremely aware".
    a. 0) not at all aware
    b. ...
    c. 10) extremely aware
    d. DON'T KNOW

13. Over the course of the program, how did the level of awareness and interest in energy conservation change among your students?

14. How influential was the education materials you provided to the students in their decisions to install the equipment in the kit, including the LED light bulbs? Please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "extremely influential"
    a. 0) not at all influential
    b. ...
    c. 10) extremely influential
    d. DON'T KNOW

15. How influential do you think the encouragement and support you provided to your students was on their decisions to install the equipment in the kit? Please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "extremely influential"
    a. 0) not at all influential
    b. ...
    c. 10) extremely influential
    d. DON'T KNOW

16. In your own words, please describe your role in getting your students to participate in the program and install the kit measures?

17. In general, which of the following statements do you think best describes the majority of your students' households' actions had you not provided the School Kit to your student?

    a. They would have purchased and installed about the same number of LED bulbs at about the same time.

b. They would have purchased and installed about the same number of LED bulbs within a year.
c. They would have purchased and installed about the same number of LED bulbs in one to two years.
d. They would purchase and install LED bulbs as existing bulbs burned out
e. They would not have purchased and installed any LED bulbs at that time or within the next couple years.

We're almost done. I just have a couple of more questions regarding your satisfaction and any recommendations you have for the School Kits Program going forward.

18. [If Q36 web survey response <4] During the web survey you mentioned that you were only [Q36 scaled response] with [Q36 program part response]. Can you please provide some more detail on why you provided this score?

19. On the web survey, you also said that [Q35 web survey response] could help improve the School Kits Program. Can you provide some more detail on how that would help improve the program going forward?

20. Lastly, are there any other ways you think the School Kits Program could continue to improve going forward? [Probe on outreach efforts, curriculum adjustments, kit measures, increasing student engagement, etc.]

Thank you, that is all of the questions I have. As a reminder, we will send you an additional $25 Tango gift card for completing the interview, along with the chance to win an additional $100 Tango gift card as part of our raffle with all teachers that completed an interview.

B.4 Utility Benchmarking Interview Guide

Introduction

Hello, this is INTERVIEWER NAME, calling from Evergreen Economics on behalf of Xcel Energy. Is CONTACT NAME available?

INTRO 2 We are working with Xcel Energy on a benchmarking and best practices study for the Colorado School Education Kits Program. As part of this study, we are reaching out to leaders of school education kit programs to learn about innovative programs and best practices in the field.

We would like to include UTILITY in this study, as your PROGRAM has been identified as an innovative peer program. We would like to spend some time talking with you about your PROGRAM's design and implementation, as well as your successes and challenges with the PROGRAM.

[IF NEEDED:] We will not be requesting any customer or participant data.

INTRO 3 Are you available to discuss your experience with the PROGRAM?

a. Yes [RECORD CONTACT INFORMATION; SETUP INTERVIEW TIME; EMAIL INTERVIEW TOPICS]
b. No [DISCUSS CONCERNS; ANSWER QUESTIONS]

Program Design

First, we'd like to talk through the basic design and organization of your program.

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

1. To start, can you describe your program at a high level?
    a. What are the program's overall objectives?
2. [If not already discussed] As part of the program, do you provide educational curriculum content to the participating teachers in addition to the household kits?
    a. [If yes] How do you create this educational material?
    b. [If yes] What influences the content in the educational material? [Probe on state educational standards, internal educational goals, relation to the kit measures, etc.]
    c. What feedback, if any, have you received from participating teachers regarding the educational curriculum?

i. Have you made any adjustments to the educational curriculum based on feedback from teachers?

3. Is your program run by utility staff or a third-party implementer?

    a. [If third-party implementer] Who is the third-party implementer that helps run the program?

    b. [If third-party implement] How are the responsibilities shared between your utility and [third-party implementer]? [Probe on allocation of resources, how the educational content is sourced, interactions between third-party implementer and utility, etc.]

    c. [If third-party implementer] What has been your experience working with [third-party implementer]? [Probe on successes, challenges, changes over time, etc.]

4. How many PROGRAM STAFF OR IMPLEMENTER STAFF members support the program?

5. [IF NOT ALREADY MENTIONED] Are there any other types of support, such as trade allies, that play a major role in the program delivery?

B. Program Efficiency Measures and Savings Process

Next, I'd like to talk about your program's efficiency measures and savings process.

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

6. What specific measures are offered as part of the school kit?

    a. [If measures not included in Xcel Energy kit] Can you discuss how you decided to include [outside measures] in your program's kit? [Probe on cost effectiveness, savings potential, measure saturation, installation frequency, etc.]

7. What methodology do you use to calculate installation rates for the kit measures?

    a. What are the approximate installation rates for each of the kit measures? [Probe on each individual measure mentioned in Q6]

    b. How do the installation rates influence what individual measures to include in the kit?

    c. What strategies do you implement to try and maximize the installation rates for the kit measures?

8. Are the program savings calculated at the kit level or on an individual measure basis?
    a. [If measure basis] Are the measure savings estimated, deemed or some combination?
        i. [If combination] What measures have deemed vs. calculated savings?
9. Did UTILITY have energy savings goals specific to the PROGRAM for 2017?
    a. [If yes] What were the program's energy savings goals in 2017? (MWh and Dth)?
        i. Were these savings goals based on gross or net savings?
    b. What were the energy savings goals for the entire efficiency portfolio in 2017?
10. Did you apply a net-to-gross (NTG) ratio to these savings?
    a. [If yes] Please describe the NTG ratio you used and how it was developed?
    b. [If yes] Are the NTG ratios developed at the kit level or on an individual measure basis?
    c. [If yes] Do you plan to continue applying this same NTG ratio to the program going forward?
        i. [If no] Please describe your plans to adjust or change the NTG ratio for the PROGRAM.
    d. [If no] How was the decision made to not apply a NTG ratio for the PROGRAM?
    e. [If no] Do you have any plans to implement a NTG ratio for the PROGRAM going forward?
        i. Please describe the rationale for including a NTG ratio going forward and what NTG ratio you plan to implement.
11. What were the total gross and net savings reported for the PROGRAM in 2017?
    a. How do these totals compare to previous years of the PROGRAM's implementation? [Probe for an increase/decrease, impacts of measure changes, etc.]
12. How are the savings attributed to the PROGRAM factored into the larger energy efficiency portfolio and portfolio energy savings goals?
    a. Approximately what percentage of the portfolio savings come from the PROGRAM?
    b. How would you evaluate the relative importance of the PROGRAM within the context of your energy efficiency portfolio?

13. Do you estimate the incremental costs for the individual measures included in the kit?
    a. [If yes] What are the incremental costs for each of the measures included in the kit?
    b. [If yes] How are these incremental costs used to inform decisions regarding which measures to include in the kit?
14. We'd also like to know more about the budget or total operating costs of PROGRAM to get a sense of the utility cost of energy savings. Ideally, this includes program incentives, salaries of program staff (including support staff who may not work on the project full-time), marketing, consulting, and other overhead.
    a. What is the program's total operating budget?
15. Do you apply any type of cost effectiveness test to the PROGRAM?
    a. What type of cost effectiveness test is applied to the program?
        i. [If cost effectiveness test applied at measure level] What measures have you found to be most cost effective?

Program Participation

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

16. What kind of outreach and marketing does the utility conduct to increase awareness and engage potential program participants?
    a. What strategy have you found to be most effective?
17. [If use third-party implementer] What kind of outreach and marketing does [third-party implementer] conduct to increase awareness and engage potential program participants?
    a. Which of those strategies has been most effective?
    b. What roles does [third-party implementer] play in driving participation in the program?
18. How many teachers participated in the PROGRAM in 2017?
    a. How many kits were distributed to these participating teachers in 2017?
    b. How does this participation compare to previous years of the PROGRAM?

19. Do you actively track how many teachers have participated in the PROGRAM in previous years?

    a. [If yes] Approximately what percentage of 2017 teacher participants do you believe had participated in the PROGRAM previously?

20. How do you track participant data? [Probe on types of data collected, how it's managed, who is responsible for tracking data, etc.]

Program Successes, Challenges, and Ongoing Changes

I just have a few more questions about the overall program successes and challenges you have experienced.

21. In your opinion, what have been the most notable successes of the PROGRAM?

22. What have been the most notable challenges you've experienced with the PROGRAM?

    a. How have you attempted to overcome these challenges?

23. Have you implemented any major changes to the PROGRAM over the last year?

    a. [If yes] How have these changes impacted the PROGRAM? [Probe on overall participation, ease of participation, participant satisfaction, program implementation, etc.]

24. Looking forward, do you have any plans to implement additional changes to the PROGRAM over the next year?

    a. [If yes] What influenced your decision to implement these changes?

Great! Thank you so much for your time. Those are all the questions we have for you today. Before we finish, do you have any questions for me, or anything else you would like to add?

B.5 School Education Kits Program Staff Survey Guide

To support the process and impact evaluation of the 2017 Xcel Energy efficiency programs, the EMI Consulting evaluation team conducted telephone interviews with key staff managing and implementing the Colorado School Education Kits Program. The interview objectives were to collect staff feedback on program experiences and evaluation priorities. The evaluation team interviewed the staff members that are most directly involved in managing and implementing the Colorado School Education Kits Program including the Xcel Energy Program Manager and the two co-managers at the prime contractor that implements the material for the program.

Roles and Responsibilities

1. Please tell me about your role in the School Kits Program. What are your main responsibilities and how long have you been involved?
    a. In any given week, how much of your time is allocated to the Program?
    b. How many staff from Xcel Energy have a role in the School Kits Program and what are their roles?

Program Implementation and Delivery

2. Can you please describe to me how the School Kits Program operates? [PROBE: enrollment, delivery, kit distribution, survey data collection, QA/QC]
    a. Which measures included in the kit does Xcel Energy claim savings for?
    b. Which state and/or national curriculum standards do the program's lesson content align with?
    c. Do teachers understand that the curriculum is in line with the state's requirements?
    d. Is there any training for teachers? Or requirements for teachers to participate?
3. Are there any other school-related resources/programs that Xcel Energy offers in Colorado? [PROBE: demonstrations, energy classroom, calendar activity]

Program Goals and Achievements

4. What are the program's overall objectives? [PROBE for qualitative metrics]
    a. What are the program targets? [PROBE: How is performance measured?]
    b. Has program performance this year been consistent with your expectations? Why or why not?
5. Do you believe that the program has sufficient resources to meet the goals? (e.g., budget, staff resources, incentives, program partner support, marketing materials).
6. What would you say are the program's greatest strengths? [PROBE for specific success stories, if available]
    a. What are the biggest challenges?
7. Has the program encountered any obstacles or bottlenecks in implementation? How have you managed them? [PROBE: Have these ever interfered with meeting goals?]
    a. Have there been any recent changes to the program implementation approach or strategy? If so, why were they made? Were they successful?
    b. Do you recall any changes made in to the program in past years as a response to a specific challenge or issue? If so, did the change resolve the problem?
8. Overall, are you satisfied with how the program is being delivered?
    a. Are there areas of the program delivery that could be improved?

Marketing/Recruitment

9. How are participants (teachers) recruited to the program? [PROBE: tactics/messaging]]
    a. Which of these tactics is most effective?
    b. Have there been any challenges in recruitment? If so, what?
    c. Do you feel the current marketing strategy is effective? Why or why not?
10. Who is the target market for this program? [PROBE: What are the eligibility requirements for the program?]
    a. How are potential participants (teachers) targets to participate in the program?
11. What do you think are the common reasons for teacher/school participation?
    a. What type of support or motivation does the program receive from principals, administrators, and teachers?
    b. What value do teachers see in participating in the School Kits Program?
12. What are the barriers to teacher/school participation?
    a. What types of activities does the program use to help overcome participation barriers?

Program Administration

13. Briefly, can you please describe the various external stakeholders involved in the delivery of the program and their roles? [educational organizations, environmental groups, etc.]
    a. Can you please describe the relationship and responsibilities between each of the various stakeholders and subcontracted partners?
14. How do you communicate with [Xcel Energy/AM Conservation] about program operations? [PROBE: frequency/ channels]
    a. Are you satisfied with the level of communication among program stakeholders?
15. Is there any improvement that could be made in the administration of the program?

Data Tracking & Quality Assurance/Quality Control

16. How are data tracked for the program?
    a. What type of data are collected?
    b. Is Salesforce used for any tracking for the School Kits Program? If so, what type of data is tracked in Salesforce?
    c. b. How are program data used? [PROBE: Is it reported? To whom? How often?]
    d. Is there any way to check if a household received more than one kit? Or if a household received a kit in a previous program year?
17. What is the data validation process? [PROBE: Who is responsible? How often is program data QC'ed?]
    a. What M&V activities are in place to verify program data, installation rates, etc.?
18. Are you satisfied with the program's data tracking protocol?
    a. Have there been any challenges with the data tracking process?

Wrap Up

19. Are any program changes planned for next year?

20. Are there any specific questions about the program you are hoping the evaluation will answer?

    a. Is there any specific information you would like to learn from teachers or parents?

21. Any last comments or suggestions for program improvement?

Thank you very much for your time today!

APPENDIX C: STAFF INTERVIEW FINDINGS

To support the process and impact evaluation of the 2017 Xcel Energy efficiency programs, the EMI Consulting evaluation team conducted telephone interviews with key staff managing and implementing the Colorado School Education Kits product. The interview objectives were to collect staff feedback on program experiences and evaluation priorities. The evaluation team interviewed the staff members that are most directly involved in managing and implementing the Colorado School Education Kits product including the Xcel Energy Program Manager and the two co-managers at the prime contractor that implements the material for the program.

This memo contains our summary of the following key topics addressed in the interview guide questions:

- Roles and responsibilities of key staff members y to
- Program implementation and delivery strategies
- Program goals and achievements

1.1 Key Takeaways

Below are key takeaways from staff experiences with the CO School Education Kits program received during the staff interviews. These key takeaways provide an overview of the program and context for our evaluation priorities.

- The main responsibilities of the program are split between the program manager at Xcel Energy, who handles some of the day-to-day responsibilities and ensures the educational material aligns with Xcel Energy standards, and the program implementer, AM Conservation, who is responsible for assembling and distributing the marketing and educational material to participants.
- The program recruits teachers twice a year and continues to receive positive feedback from participating teachers, many of whom continue to participate each calendar year. Teachers have expressed that the material matches their curriculum well and see the program as a positive way to promote energy efficiency practices for their students.
- The program has met or exceeded its energy savings targets every year, which current staff members attribute to a good program structure and adequate resources such as staffing, marketing support and incentive structure.
- The Xcel Energy program manager and the implementation firm, AM Conservation, have a strong existing relationship and communicate frequently to address any potential issues or upcoming program changes. Neither party noted any significant barriers over the last two years.
- As the adoption rate increases for household technologies such as LEDs, the School Education Kits program is looking to identify new measures to include in their kits that can provide energy savings.

1.2 Roles and Responsibilities

The main responsibilities involved with managing and implementing the Colorado School Education Kits Program are shared between the Xcel Energy Program Manager and the prime implementation firm, AM Conservation. The Program Manager for the School Education Kits Program is also responsible for managing other Xcel Energy programs and allocates approximately a quarter of their time (8-10 hours a week) to the School Education Kits Program. There are no other Xcel Energy staff dedicated exclusively to the program but the Program Manager does work directly with one other internal Xcel Energy staff member that focuses on advertising and branding.

Key responsibilities of the Program Manager include:

- Support program implementers to ensure marketing material is consistent with brand standards
- Ensuring targeted schools are in Xcel Energy service territory
- Invoicing program costs
- Other day-to-day tasks to enhance the program and ensure participants are satisfied with the program

For the implementation firm, AM Conservation, there are two primary co-managers that oversee the efforts for the Colorado School Education Kits Program. During the primary recruitment seasons – fall and spring – the co-managers spend approximately 20 hours a week each on the program. They also have a shipping manager, a shipping logistics coordinator and an invoicing manager. Additionally, they work with a sub-contractor that helps put together the actual educational curriculum together and provides marketing support for participating teachers across all Xcel Energy service states.

Key responsibilities of the implementation firm include:

- Design and execute marketing and recruitment materials for eligible schools
- Coordinate with Xcel Energy to ensure educational curriculum is following their brand standards
- Produce and distribute the educational kits
- Manage the shipping schedule for educational kits across Colorado
- Manage the Home Energy Worksheets (HEWs) that households complete after receiving kit
- Maintain database of completed HEW responses; generate data into report monthly and annual summary reports for Xcel Energy

1.3 Program Implementation

The following bullets present the evaluation team's understanding of the how the program is implemented based on staff interview results and review of available product documentation.

- The program targets and actively recruits schools twice a year – during the fall and spring semesters – using email communication and awareness drives. The most effective recruitment tactics include email blasts at the beginning of each season, having teachers participate year after year and customer

service representatives reaching out to teachers directly. Once a teacher is interested in participating, they can respond to Xcel Energy via email or contact AM Conservation directly (or online).

- Once teachers enroll their class for the program, they select when they would like to receive the school kits and curriculum. Teachers can elect to use as much or as little of the curriculum as they want, with the intent being they can coordinate the material into their existing lesson plans. The curriculum content is designed specifically for Colorado standards.
- After teachers distribute the kits to their students, the students take the kits home along with the Home Energy Worksheet (HEWs) "homework assignment" that involves installing the equipment, and filling out worksheet to estimate potential energy savings.
- The completed HEWs are then given back to the participating teachers or completed online through AM Conservation. Teachers send returned HEWs to AM Conservation and receive an incentive if they submit a certain percentage of their students' forms.
- Once AM Conservation receives the data – either through the online system or from the teachers directly – they record responses in their internal database. They analyze the raw data and put together a summary report for Xcel Energy. This summary includes the number of kits distributed and participating students, individual installation percentage for each item in the kit, parent evaluation responses, teacher information and name of every participating school. The summary data is compared from season to season to evaluate how installation and participate rates are improving or declining. For quality control, the electronic database is cross-checked with the physical HEWs completed by participating households to ensure the correct information was recorded.
- Based on the equipment in the kits, Xcel Energy claims savings on the LED light bulbs (n=6), the energy efficient showerhead, the kitchen aerator and the bathroom aerator.

1.4 Program Goals and Achievements

During interviews, staff identified only basic program goals given the relative simplicity of the Colorado School Education Kits product. Specifically, the primary goals of the product are to drive energy savings and, from a qualitative standpoint, continue to build the Xcel Energy brand, drive customer engagement and customer satisfaction. The product provides a unique opportunity for students to discuss energy efficiency with their families and help students become interested in learning about energy usage in their home.

Staff interviews also explained that gas and electric savings targets for the product are based on estimated installation and participation rates shared by AM Conservation. Specifically, goals for the program involve participation rate, the number of kits shipped, energy savings targets and the outlined budget.

In addition to highlighting the goals of the program, the staff interviews also helped identify specific strengths and barriers of the program. Strengths included factors that product staff identified as supporting the success of the program while barriers included factors that program staff identified as potentially being weaknesses of the program in subsequent years. Overall, program staff noted that currently they do not have many barriers for the program, highlighted by consistently reaching their savings goals.

Strengths

- Participating teachers understand the educational curriculum and opt to participate because the material incorporates well into what they planned on teaching regardless of the program
- The program has met or exceeded its savings goals every year, which program staff noted is supported by having sufficient resources devoted to the program such as budget, staff, resources, incentives and marketing support
- The strong relationship between Xcel Energy and AM Conservation allows the program to function efficiently with frequent communication and clearly defined roles
- The infrastructure of the program allows for constant feedback on installation rates and easy adjustments to the program. For example, the program team added the online HEW form to help drive participation and marketed a lighting add-on activity for students to identify additional fixtures in their home in an effort to increase lighting installation rates
- Previous evaluations of teacher feedback have shown high levels of satisfaction, including a large percentage of teachers that continue to participate every year and market the program directly to other teachers.

Barriers

- During previous evaluations, installation rates of the equipment supplied in the school kits – such as showerheads and home lighting – were lower than similar Xcel Energy programs. This was partly attributed to the methodology of the HEW (which has since been updated to increase installation rates)
- Going forward, current kit items such as home lighting and showerheads may not be robust measures that drive savings. The program team is looking to diversity the kits and plan for additional measures

1.5 Feedback on Evaluation Priorities

During the staff interviews and kick-off meeting, we reviewed our evaluation outline with staff to gather feedback on our existing plan and potentially identify additional evaluation priorities to address. Based on initial review of the program material and the kick-off meeting with program staff, we identified the following research questions to structure our evaluation:

- What are the backgrounds for participating teachers, including experience, primary subjects they teach, and their existing views on energy efficiency?
- How well does the educational curriculum material in the Program Kits mesh with existing energy curriculum and how do teachers incorporate the material into lesson plans?
- What parts of the program do students engage with the most and how can the material be improved to better fit the needs of households?
- What aspects of the Program Kits are households installing most frequently and what measures are most useful for households?
- How satisfied are teachers and parents with the program and what suggestions – including adjustments to the curriculum the measures included in the kit – do both parties have for improving the program going forward?

- How familiar are parents with the energy efficiency measures included in the kits and to what extent were these measures installed in the home prior to receiving the kit?
- How has their experience with the kits, the educational materials provided to their child, and their child's experience with the classroom and related activities influenced them to install additional energy efficiency measures in their home?

Overall, the program staff accepted our initial research goals and did not have suggestions for any significant additions to the evaluation. The program manager did acknowledge that capturing parent and teacher suggestions for potential kit measures going forward would be helpful to ensure the program can continue to provide technologies that are providing energy savings for customers.

These research questions, along with a detailed description of the research tasks and overall evaluation priorities will be incorporated into the evaluation plan.

APPENDIX D: PARTICIPANT SURVEY FREQUENCY TABLES

1. The kit your household received contained four 9-Watt LED light bulbs and two 11-watt LED light bulbs. Of the six LED bulbs, how many are currently installed in your home?

Value	Percent
1	0.9
2	2.8
3	7.3
4	12.8
5	6.4
6	67.9
Don't know	1.8

2. [If Q1<6 and Q1≠0] Did you initially install more of the LED bulbs and then later remove them?

Value	Percent
Yes	7.3%
No	90.8%
Don't know	1.8%

3. [If Q2=yes] Why did you choose to remove the LED bulbs? Please select all that apply.

Value	Percent
Did not like the light output of the bulb	12.5%
Did not like the overall quality of the bulb	0.0%
The bulb began to decrease in quality over time	0.0%
The bulb burned out	25.0%
The bulb did not fit in the desired fixture	37.5%
Your household did not see any energy savings while using the bulb	0.0%
Other (Please specify:_____):	25.0%

4. [If Q1=0] Why did you decide to not install any of the LED bulbs?

Value	Percent
N/A	100%

5. Have you ever received or purchased an LED bulb through another Xcel Energy conservation program?

Value	Percent
Yes (Please provide details about your purchase:_____)	11.9%
No	75.2%
Don't know	4.6%
Don't remember	8.3%

Value
at Home Depot
DJDS as well as DGS
I buy LED bulbs at Costco and there's always a discount from Xcel
I got a package of LED bulbs a number of years ago from someone handing them out at the children's museum but I can't remember if it was Xcel sponsored.
It was quite a few through the Xcel program.
My 6th graders brought them home
Previous year school conservation program
Promotions incl Xcel but also have purchased my own
Received an email that said I could receive some.
Sorry, cannot recall the details.
The discounted cfl / led light bulbs at stores
We replaced almost every bulb in our home before our daughter brought home the kit from school.
Yes, a faire where they were handed out

6. The energy efficiency kit your household received also contained a high-efficiency showerhead to help reduce your water use. Did you install the high-efficiency showerhead in your home?

Value	Percent
Yes	56.0%
No	43.1%
Don't know	0.9%

7. [If Q6=yes] And do you still currently have the high-efficiency showerhead installed?

Value	Percent
Yes	98.4%
No	1.6%

8. [If Q7=No] Why did you choose to remove the high-efficiency showerhead? Please select all that apply.

Value
Water pressure was too low

9. [If Q6=No] Why did you choose to not install the high-efficiency showerhead? Please select all that apply.

Value	Percent
Did not fit shower properly	6.4%
Did not include preferred features	17.0%
Did not like the style/looks/quality	4.3%
Do not remember receiving the showerhead	0.0%
Gave the showerhead to another household	4.3%
Already had a high-efficient showerhead installed	46.8%
Preferred current showerhead	25.5%
Too difficult to install	2.1%
Other (Please describe:_____)	2.1%

10. Have you ever received or purchased a high-efficiency showerhead through another Xcel Energy conservation program?

Value	Percent
Yes	5.5%
No	89.0%
Don't know	2.8%
Don't remember	2.8%

Value
6th grade box
Did not purchase, but received a low-flow showerhead as part of another program through Xcel. That one is still installed too.
Promotion from Xcel
Received one in a previous promotion.

Value
Received one through Xcel
Sent one by Xcel

11. The energy efficiency kit also included two faucet aerators for your sinks, one for the bathroom and one for your kitchen. Did you install a faucet aerator on your kitchen sink?

Value	Percent
Yes	40.7%
No	56.5%
Don't know	0.9%
Don't remember	1.9%

12. [If Q11=yes] And is the faucet aerator still installed on your kitchen sink?

Value	Percent
Yes	86.4%
No	13.6%

13. [If Q12=No] Why did you decide to remove the kitchen faucet aerator? Please select all that apply.

Value	Percent
Broke/stopped working	0.0%
Did not fit in the faucet properly	17.0%
Did not know how to use it	0.0%
Did not like the way it looked	17.0%
Installed incorrectly	17.0%
Water pressure was too low	33.3%
Did not observe any energy savings on bill	0.0%
Other (Please describe:_____): Too Noisy	17.0%

14. [If Q11=No] Why did you choose to not install the kitchen faucet aerator? Please select all that apply.

Value	Percent
Could not install because it did not fit properly	36.7%
Did not have time to install	10.0%
Do not recall receiving the faucet aerator	0.0%
Did not like the look or quality of the faucet aerator	0.0%
Too difficult to install	1.7%
Already had a faucet aerator installed in my kitchen	26.7%
Preferred current faucet aerator in kitchen	21.7%
Other (Please describe:_____)	10.0%

Value
Actually installed it in our laundry room sink
Husband went to do it and I don't know what happened - but they're not on the faucet now
installed at rental
Moved
My faucet already has an aerated flow
Our water pressure is really low

15. Did you install a faucet aerator on your bathroom sink?

Value	Percent
Yes	40.7%
No	54.6%
Don't know	2.8%
Don't remember	1.9%

16. [If Q15=yes] And is the faucet aerator still installed on your bathroom sink?

Value	Percent
Yes	95.3%
No	4.7%

17. [If Q16=No] Why did you decide to remove the bathroom faucet aerator? Please select all that apply.

Value	Percent
Broke/stopped working	50.0%
Did not fit in the faucet properly	50.0%
Did not know how to use it	0.0%
Did not like the way it looked	0.0%
Installed incorrectly	0.0%
Water pressure was too low	0.0%
Did not observe any energy savings on bill	0.0%
Other (Please describe:_____)	0.0%

18. [If Q15=No] Why did you choose to not install the bathroom faucet aerator? Please select all that apply.

Value	Percent
Could not install because it did not fit properly	48.2%
Did not have time to install	17.9%
Do not recall receiving the faucet aerator	5.4%
Did not like the look or quality of the faucet aerator	0.0%
Too difficult to install	1.8%
Already had a faucet aerator installed in my kitchen	60.7%
Preferred current faucet aerator in kitchen	21.7%
Other (Please describe:_____)	10.0%

19. Have you ever received or purchased a faucet aerator through another Xcel Energy conservation program?

Value	Percent
Yes	4.7%
No	87.7%
Don't know	2.8%
Don't remember	4.7%

Spillover

Next, I'd like to ask you about other types of energy efficiency equipment you may have purchased since receiving the Home Energy Kit from Xcel Energy.

20. Since receiving the Home Energy Kit, have you purchased or received any other energy efficient equipment or services for your home that did not receive a rebate?

Value	Percent
Yes	25.2%
No	63.6%
Don't know	7.5%
Don't remember	3.7%

21. [If Q20=yes] Please select the types of energy efficient equipment you have purchased since receiving the Home Energy Kit and the quantity of each selected equipment.

Value	Percent
Additional LED light bulbs	88.9%
Additional faucet aerators	22.2%
Additional high-efficiency showerhead	25.9%
Energy efficient AC	25.9%
Energy efficient clothes washers	29.6%
Energy efficient clothes dryers	22.2%
Energy efficient furnace	22.2%
Energy efficient heat pump	14.8%
Energy efficient refrigerator	25.9%
Smart/programmable thermostat	40.7%
Energy efficient windows	11.1%
Energy efficient doors	0.0%
Air sealing improvements	25.9%
Energy efficient ceiling fan motors	22.2%
Other ENERGY STAR appliances (Please describe:_____)	14.8%
Other (Please describe:_____)	14.8%%

Free Ridership

22. ***Before*** receiving the School Energy Kit, do you recall receiving any rebates from Xcel Energy for making energy efficiency upgrades at your home?

Value	Percent
Yes	22.4%
No	67.3%
Don't know	10.3%

23. [If Q29=yes] For what efficiency upgrades did you receive a rebate from Xcel Energy?

Value	Percent
Furnace	33.3%
Insulation	16.7%
Air Conditioner	5.6%
Clothes Washer	11.1%
Clothes Dryer	5.6%
Energy Star Appliances	11.1%
AC cycling	11.1%
Hot water heater	5.6%
Programmable thermostat	11.1%
Lighting	11.1%

24. How influential was the educational materials your child brought home in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential and 10 means "very influential."

Value	Percent
0 – Not at all influential	1.9%
1	0.0%
2	1.9%
3	3.8%
4	3.8%
5	9.5%
6	7.6%
7	17.1%
8	21.0%
9	14.3%
10 – Extremely influential	19.0%

25. How influential was encouragement you or your child received from their teacher in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential and 10 means "very influential."

Value	Percent
0 – Not at all influential	0.0%
1	2.0%
2	0.0%
3	5.1%
4	3.1%
5	13.3%
6	4.1%
7	13.3%
8	21.4%
9	17.3%
10 – Extremely influential	20.4%

26. How influential was any contact you have had with Xcel Energy in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "very influential."]

Value	Percent
0 – Not at all influential	22.5%
1	5.6%
2	4.5%
3	7.9%
4	2.2%
5	13.5%
6	5.6%
7	13.5%
8	7.9%
9	7.9%
10 – Extremely influential	9.0%

27. How influential was encouragement from your child in your decision to install the LED bulbs included in the kit your child brought home? Please use a scale from 0 to 10 where 0 means "not at all influential and 10 means "very influential."

Value	Percent
0 – Not at all influential	1.0%
1	0.0%
2	1.0%
3	1.0%
4	2.9%
5	4.8%
6	5.7%
7	17.1%
8	13.3%
9	18.1%
10 – Extremely influential	33.3%

28. [If Q1>0 or Q1=0 and Q2=Yes] Thinking about all four of these potential influences together, how influential were they collectively on your decision to install the LED bulbs included in the kit your child brought home? Again, please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "very influential."

Value	Percent
0 – Not at all influential	1.0%
1	2.9%
2	0.0%
3	2.9%
4	1.9%
5	2.9%
6	6.7%
7	14.3%
8	18.1%
9	21.9%
10 – Extremely influential	27.6%

29. Which statement best describes your actions had your child not brought home the school energy education kit... [REVIEWER NOTE: FOR ANALYSIS, WE WILL APPLY VALUES OF 0, 3, 7, AND 10 TO ITEMS 1, 2, 3, AND 4 BELOW]

Value	Percent
I would have purchased and installed about the same number of LED light bulbs at about the same time	12.5%
I would have purchased and installed about the same number of LED light bulbs in one to two years	10.6%
I would have purchased and installed about the same number of LED light bulbs within a year	13.5%
I would have purchased and installed LED light bulbs as existing light bulbs burned out	42.3%
I would not have purchased and installed any LED light bulbs at that time or within the next couple of years	21.2%

30. Before receiving the School Energy Kit, did you have any LED bulbs installed in your home?

Value	Percent
Yes	70.5%
No	28.6%
Don't know	1.0%

31. [If Q37=yes] Approximately how many LEDs are currently installed in your home?

Value	Percent
0	1.4%
1	0.0%
2	9.5%
3	12.2%
4	9.5%
5	2.7%
More than 5	64.9%

32. [If Q37=yes] Approximately when did you purchase and install your very first LED bulb?

Value	Percent
2012 or earlier	21.8%
2013-2015	20.7%
2016	24.1%
2017	21.8%
2018	11.5%

Program Experience and Satisfaction

Now, we have a few questions about your overall experience and level of satisfaction with the Xcel Energy School Education Kits Program.

33. Since your household participated in the program, how often do you and your family talk about saving energy around the house?

Value	Percent
All the time (once a week or more	23.8%
Frequently (about once a month)	39.6%
Sometimes (a few times a year)	28.7%
Rarely (once or twice a year)	6.9%
Never	1.0%

34. How has the frequency of these conversations changed since participating in the program?

Value	Percent
The number of conversations about saving energy has increased	49.0%
The number of conversations about saving energy has remained about the same	45.0%
The number of conversations about saving energy has decreased	1.0%
Don't know	5.0%

35. And since your participation, what benefits, if any, have you observed in your household as a result of the School Education Kits Program? Please select all the apply.

Value	Percent
None	7.4%
Increased overall awareness regarding household energy usage	56.8%
Increased overall number of energy saving activities	32.6%
Observed a lower energy bill as a result of lower energy usage	25.3%
Learned about new energy efficiency items	31.6%
Don't know	5.9%

36. Now, using a scale from 1 to 5, where 1 is not at all satisfied and 5 is extremely satisfied, how satisfied are you with the following aspects of the Xcel Energy School Education Kits Program?

Value	1	2	3	4	5
The School Education Kits Program overall	0.0%	1.0%	5.0%	42.6%	51.5%
The household activities you completed as part of the program	0.0%	0.0%	11.0%	46.0%	43.0%
The installation requirements for the equipment types included in the School Education Kit	0.0%	2.0%	8.1%	42.4%	47.5%
The LED bulbs provided in the School Education Kit	0.0%	0.0%	4.0%	32.0%	64.0%
The high-efficiency showerhead provided in the School Education Kit	3.1%	7.1%	23.5%	31.6%	34.7%
The faucet aerators provided in the School Education Kit	2.0%	12.1%	29.3%	30.3%	26.3%
a. The other upgrades provided in the School Education Kit (filter whistle, LED night light, toilet leak tablets)	0.0%	3.0%	25.7%	36.6%	34.7%

Household Characteristics

Lastly, I just have a few questions about your home.

37. Which of the following best describes the type of home you currently live in?

Value	Percent
Apartment	7.0%
Condominium	3.0%
Duplex, triplex, four-plex	3.0%
Town home	2.0%
Single family, detached home	83.0%
Single family, manufactured or mobile home	2.0%

38. Do you own or rent your home?

Value	Percent
Own	75.2%
Rent	23.8%
Don't know	1.0%

39. How many showers does your household have?

Value	Percent
1	13.9%
2	49.5%
3	26.7%
4	8.9%
5	1.0%

40. How many bathroom and kitchen sinks does your household have?

Value	Percent
1	2.0%
2	8.9%
3	21.8%
4	30.7%
5	16.8%
More than 5	19.8%

41. How many people live in your household full-time?

Value	Percent
1	3.0%
2	1.0%
3	14.9%
4	38.6%
5	27.7%
More than 5	14.9%

42. That is all the questions we have. Do you have any comments that you think would help improve the Xcel Energy School Education Kits Program going forward?

Value
As a consumer I loved this box.
Have Excel and City of Longmont team up. Have energy efficient classes held to teach us what to do and give us the tools to do it. Teach more about it in school but also teach the parents as well.
I feel like it is not necessary to send every kid home with every item in the kit. Maybe encourage kids to start a conversation at home on what they could change and then request those items. Otherwise ours is sitting on a shelf in the basement with most of the items still in it.
I think it's already a great program!
I think it's a great program. Keep it up.
Include information on energy saving programs and rebates that are available through Xcel Energy.
It is a great program & we were excited to participate
Kit is great.
Love this program but wish we would have received the kits with more time to discuss/install at home. Seemed like we only have a day or two but it was a busy time of year. Would also be cool to consider science fair project kits/ideas as another education option. ALWAYS looking for cool new ideas... Thank you.
My daughter and I were both very excited to participate in this program. She was so excited to bring all of these things home from school and she insisted that we get to work installing them right away. It was definitely an impactful program in raising her awareness of these issues, and showing her how simple steps at home can help make a big difference.
No
No additional comments, thank you for the kit
No but thank you!
No. It's a great idea.
None
None.
nope

Value
Put more things in the kits specifically for kids.
Something the kids can use to track the changes they've made.
Something to re-engage the children after the initial installation
Thank you for bringing awareness to our youth; it is important that they learn at a early age.
Thank you for introducing the program to my kids and the school.
Thank you for these kits. We already had water efficient showerheads, but my daughter was so excited to install yours that we replaced one of our brushed nickel heads with the one in your kit.
Thank you for this kit, it was an excellent "in-your-face" reminder to help us facilitate a move to be more energy efficient in a more timely manner.
Thanks for doing this - I think the collaboration between private sector and our schools is a great thing.
Thanks for letting us participate.
Thanks for teaching our kids about energy!
The program made my child realize what he could do at home to help out with saving energy in many different ways
They are great
This is a great program that the school provides. We really appreciate it!
This is a great program! Our son was very excited to use this kit & everything in it RIGHT AWAY, so I'm hoping whatever you put in the kits gets used by the families because of their child's excitement. I think it's a great way to inform kids as well as parents. Everyone can learn to be a little more energy efficient. Thank you for the kit! You could also include additional information about using Energy Star appliances, outdoor efficiency (water, tools, weather stripping, etc.) information and/or a program for basement/garage fluorescent tube lighting.
This was a great awareness program- thank you!

Thank you very much for completing the School Education Kit Program Parent Web Survey! Your responses will help Xcel Energy continue to improve its household energy efficiency programs going forward.

APPENDIX E: TEACHER SURVEY FREQUENCY TABLES

1. How many years have you been a teacher, either at your current school or some other school?

Value	Percent
Less than 2 years	2.0%
2-5 years	16.3%
6-10 years	22.2%
11-20 years	34.0%
More than 20 years	25.5%

2. What are the primary subjects you currently teach? (Select all that apply)

Value	Percent
Science	35.9%
Math	25.5%
English	20.3%
Social Studies	13.1%
All of the above	55.6%

3. What grades are you teaching this school year?

Value	Percent
Kindergarten	2.0%
1st grade	2.6%
2nd grade	3.9%
3rd grade	5.2%
4th grade	10.5%
5th grade	75.8%
6th grade	24.8%
7th grade	5.2%
8th grade	3.3%

4. Which of the following best describes your present school setting?

Value	Percent
Urban	26.8%
Suburban	56.9%
Rural	14.4%
Other (please specify)_____	2.0%

5. In general, using a 1 to 5 scale where 1 is not at all important and 5 is extremely important, how important is energy efficiency and reducing your own individual energy consumption?

Value	Percent
1 - Not at all important	0.0%
2 - Not very important	0.7%
3 - Somewhat important	11.8%
4 - Very important	50.0%
5 - Extremely important	37.5%

6. How did you first learn about the Xcel Energy School Education Program?

Value	Percent
E-mail	35.3%
Mailing	12.4%
Phone call from program staff (AM Conservation Group or National Energy Foundations (NEF))	3.9%
Referral from another teacher	39.9%
Referral from principal or administrator	3.3%
Xcel Energy website	2.6%
Other: Please specify	2.6%

Value
Did the program in my old school
I can't remember, maybe an email?
My own children participated at another school
My school already had a partnership with you in place. We have continued to use your resources.

7. What were the most important reasons you signed up for the Xcel Energy School Education Program? Please select up to five responses.

Value	Percent
Curriculum fit with existing lesson plans	54.2%
The products in the kit provided to students and families	83.7%
Energy savings for students and families	53.6%
Financial savings on utility bills for students and families	29.4%
Opportunity to teach students about energy efficiency	77.8%
Participated in a similar energy education program in the past	7.8%
Recommended by teacher, principal, or other administrator	12.4%
Adopted by school and/or fellow teachers	9.2%
Promotes energy saving behavior both in and out of the classroom	64.1%

8. [Carry forward Q7 responses] Now, please rank those reasons in order of importance, with 1 being the most important reason.

Value	Frequency
Curriculum fit with existing lesson plans	24
The products in the kit provided to students and families	23
Energy savings for students and families	4
Financial savings on utility bills for students and families	5
Opportunity to teach students about energy efficiency	41
Participated in a similar energy education program in the past	1
Recommended by teacher, principal, or other administrator	3
Adopted by school and/or fellow teachers	0
Promotes energy saving behavior both in and out of the classroom	17

9. Did you have energy conservation content included in your lesson plans before you initially decided to participate in the Xcel Energy School Education Program?

Value	Percent
Yes	51.6%
No	41.8%
Don't recall	6.5%

10. [If Q9 = "Yes"] Prior to participating in the Xcel Energy School Education Program, how did energy conservation fit into your curriculum? Did you teach it as ….?

Value	Percent
A separate unit	21.5%
Activities or exercises that fit into many units throughout the duration of the class	15.2%
One subject area within a larger unit	54.4%
Other (please describe)	2.5%
Separate activities or exercises that are used in between units or as a break from the main unit	6.3%

Value
Activities or exercises that fit into many units throughout the duration of year.
Not sure, we've used it since I started

11. [If Q9 = "Yes"] Did the Xcel Energy School Education Program impact how energy conservation fit into your curriculum?

Value	Percent
Yes	88.6%
No	10.1%
Don't know	1.3%

12. [If Q11 = "Yes"] Please describe any changes that occurred:_____

Value
A lot more emphasis and specialized opportunities
Because of the materials provided, we were able to spend more time on it, providing very practical information and activities for the students
Families became more understanding of energy conservation practices for their homes.
Focused on what families can do to save energy and save money.
Having real-world applicable products that the students can actually see and feel might be "cool" and "exciting" to them, but what it really does is give them the tangible evidence of ways we can make a change. It tied well into our units about systems-Earth Systems and Energy Systems. We need to continue motivating these kids of our future to observe, questions, research, and take action! One way is by helping our planet!
I feel that by using the program, I provide more real life opportunities for students. Able to raise awareness. Able to cover curriculum based standards.
I had a program to teach a very vague standard.
I had an anchor for it. I always have taught about the manner in which humans impact and use the environment (it is part of our standards) but this gave me something to send home. The intro video also helpfully explained concepts
I love the program as is!
I moved the unit to a better time frame to fit in with the unit that I was teaching. I also incorporated many of the activities included in the program into the unit that I was teaching.
I pulled certain things out of my existing curriculum that were covered in yours.
I think the information and lessons helped kids understand how to save energy both at school and at home.
In addition to fitting into many subject areas throughout the year it also provided it a mini unit specifically for it in the fall.
It allowed practical, actionable application of classroom learning.
It allowed us to be intentional with teaching energy efficiency and natural resources.
it is much more engaging!
It made the energy conservation unit and nonrenewable and renewable resource unit much more applicable to the students. They loved the hands on experiments and it helped them reference the material learned in class.
Our unit focuses on natural resources, both renewable and non-renewable. The kit results in more lessons that are focused on direct ways kids can conserve those resources in their home, and tools that can help them do it.
Provided other resources that could be used to teach the subject within the class.
Students and families became more aware. We also had a chance to share valuable data.
Students are more concerned with conservation
Students go to put our learning in to practice immediately

Value
Students were able to change bulbs at home and noticed differences in how "hot" they got and how long they last. Students were able to explain energy efficiency and why opting for eco-friendly products has an impact on the environment in the short and long terms.
Students were able to collect authentic data that made the bigger content areas attainable for understanding.
Students were able to utilize what they learned about energy conservation in class at home. It also allowed for us to get families involved.
Students were very excited after watching the DVD. Then they saw the kits. We were able to have several conversations over a couple of weeks about energy sources, renewable sources, and energy efficiency.
Taught the lessons as is
The content is hard to fit in, with everything we have to teach. It's nice to have a small program that can largely be focused at home.
The materials provided allowed for more purposeful and clear focus on the topic of energy conservation.
The program added hands on activities including family friendly activities.
The students have become increasingly aware of the importance of saving energy, as well as how to create ways to provide alternative resources.
The Xcel lessons did not align with the 5th grade curriculum very well. I use the lessons/activities that were applicable but did not use all of them.
time spent, application of learned skills
Using the curriculum allowed me to place a greater emphasis on energy conservation within our Earth's Resources unit.
Using the Xcel program, it gave me focus lessons instead of just trying to fit energy conservation into existing science units. Teachers are so busy trying to cover so many topics that having self-contained, well-supported (print material, videos, etc.) lessons is a huge help.
Using the Xcel Energy kits is a much more hands on, and relevant way to teach energy efficiency.
Was a very nice connection with the water cycle and water conservation. Led to numerous community centered conservation discussions with the students. Very positive addition to the educational culture of the grade level.
We actively used the materials to audit the students homes and help them save energy and resources. It was mostly an academic activity, now it is much more tangible for the students. Many families already do energy efficient efforts at home, I would like an advanced kit for students who do many of the efforts already.
We were able to dive deeper into the importance of energy conservation. The kit provided hands-on, tangible ways to conserve energy.
We were able to put in to practice the things that we were teaching. Instead of just talking about LED light bulbs, we were installing them in homes.
We were more intentional about how we explored different forms of energy, and worked to be more in sync with those plans.
With limited time on energy conservation, I used the classroom activities to create discussion about the concepts. Students had hands on experiences to them apply with families at home.

13. Select the statement that best describes your use of the program lesson plans and classroom activities.

Value	Percent
I did not use very much of the lesson plans or the classroom activities.	19.0%
I used all or most of the classroom activities, but not so much of the lesson plans	31.4%
I used all or most of the lesson plans, but not so much of the classroom activities	17.6%
I used all or most of the lesson plans and classroom activities provided	32.0%

14. [If Q13 = c or d] Which lesson plans did you not use from the Teacher Guide? For each selected answer, please check the box and provide a brief description why you did not use.

Value	Frequency
Electricity and Circuits	82.6%
Natural Gas	37.7%
Energy Transformations	53.6%
Natural Resources	27.5%
Water	29.0%
Energy Efficiency	27.5%

15. About how long would you say you spent teaching the Xcel Energy program curriculum to your students and completing the classroom activities?

Value	Frequency
Less than one day	3.3%
One to three days	35.3%
Four to five days	22.2%
Five to ten days	30.1%
More than two weeks	5.9%
Don't recall	3.3%

16. Did you share any of the program lesson plans/classroom activities with your fellow teachers that were not already participating in the Xcel Energy School Education Program?

Value	Percent
Yes	39.9%
No	59.5%
Don't know	0.7%

17. On a scale of 1 to 5 where 1 is not at all well and 5 is extremely well, how well do you think the program's lesson plans fit with Colorado's curriculum standards?

Value	Percentage
1 - Not at all	0.0%
2 - Not very well	1.3%
3 - Somewhat well	20.8%
4 - Very well	65.8%
5 - Extremely well	12.1%

18. On a scale of 1 to 5, where 1 means completely disagree and 5 means completely agree, to what extent do you agree or disagree with each of the following statements:
    a. "My students understood the lessons/curriculum provided in the School Education Kit program"
    b. "My students were engaged in the lessons"
    c. "My students demonstrated a better understanding of energy efficiency topics following the lessons"

Value	My students understood the lessons/curriculum provided by Xcel Energy	My students were engaged in the lessons	My students demonstrated a better understanding of energy efficiency topics following the lessons
1 - Completely disagree	0.0%	0.0%	0.0%
2 - Somewhat disagree	1.3%	2.6%	0.0%
3 - Neither agree nor disagree	6.5%	7.2%	8.5%
4 - Somewhat agree	47.1%	52.6%	46.4%
5 - Completely agree	45.1%	37.5%	45.1%

19. How engaging did your students find the following elements of the School Education Program?

	Extremely engaging	Very engaging	Somewhat engaging	Not very engaging	Not at all engaging
The program lessons/classroom activities	8.6%	46.1%	42.8%	2.6%	0.0%
The energy-efficiency kit products	48.4%	43.1%	8.5%	0.0%	0.0%
Installing the kit items at home with their families	18.3%	54.2%	26.1%	1.3%	0.0%
Filling out the student surveys	6.5%	20.9%	52.3%	19.6%	0.7%
The glow-in-the-dark wristbands	22.7%	35.3%	30.7%	10.7%	0.7%
Learning about energy efficiency	13.1%	50.3%	35.3%	1.3%	0.0%

20. How helpful would the following tools be in assisting you to incorporate the program content into your existing lesson plans?

	Extremely helpful	Very helpful	Somewhat helpful	Not very helpful	Not at all helpful
An online teacher portal to ask questions, download assignments and information, and upload worksheets completed by students	23.7%	38.2%	28.9%	7.9%	1.3%
A telephone help line to answer questions related to the program	2.6%	17.2%	31.1%	35.8%	13.2%
Program training through a webinar	9.3%	20.0%	40.7%	24.7%	5.3%
Other (Please specify)	33.3%	55.6%	11.1%	0.0%	0.0%

Value
More flexibility with time frame would be helpful. I like to do these lessons at the end of the school year (May).
More thorough explanations and teaching guides for teaching about natural resources

21. How beneficial were each of the following aspects of the Xcel Energy School Education Program?

	Content of the curriculum/teacher materials	Workbooks and posters provided to teachers	Energy-efficiency kits for students	$25 gift card for enrolling	$25 gift card for returning student survey data
Extremely beneficial	19.6%	15.7%	59.6%	67.1%	65.4%
Very beneficial	57.5%	64.7%	38.4%	25.7%	24.8%
Somewhat beneficial	22.2%	17.6%	2.0%	6.6%	7.8%
Not very beneficial	0.7%	2.0%	0.0%	0.7%	1.3%
Not at all beneficial	0.0%	0.0%	0.0%	0.0%	0.7%

22. Did you make the student surveys required homework for your students?

Value	Percent
Yes	76.5%
No	23.5%

23. Did you receive 80% or more of the student surveys back from your class?

Value	Percent
Yes	77.1%
No	18.3%
Don't remember	4.6%

24. What suggestions, if any, do you have for Xcel Energy to help encourage students to return their student surveys?

Value
Any little gift like the glow-in-the-dark wristband or the ring is a good motivation for the students.
Attach a fun component to it...i.e., a word search or something of the sorts
Candy incentives or extra credit
Classroom rewards
Contest for classrooms or continuing discussions about data past the time of the worksheets due.
Differentiate some of the lesson plans (i.e., special ed, ELL learners, etc.)
Give students credit for already doing the EE efforts. Many students have homes that use LED and water saving technologies and had little option on the worksheet to recognize it.
Giving incentives for returning the surveys helps.
How can you get parent/student involvement when they live in apartments and cannot make some of the changes? How can you address that in a parent note so they understand the importance and understand the materials use for

Value
their own homes.
I always make it part of student feedback in their projects.
I don't think I have any suggestions, but making the survey mandatory homework definitely helped with the return rate.
I made it mandatory and received 100% back
I offered the wristband and candy to those that turned theirs in. Just the wristband did not cut it.
I provided the students with the opportunity to spend the $25 gift card on classroom books.
I required them for homework. When my kids don't complete their homework, it continues to be assigned to them until they turn it in. Some of my colleagues liked the online survey option.
I required, but tied it to a class reward (which we easily obtained!)
I think offering trinkets like the bracelets actually works. My students, who are in reality fairly affluent, still wanted to earn those bracelets and loved the ring flashlights that came later. I let students complete the surveys at school as long as they installed the items in their homes.
I think that making the surveys homework helps us to get the surveys back. The glow in the dark bracelets are cool, too.
I think that requiring as homework (from me) and the $25 gift card incentive for the school was helpful. I have a small school, so students know the gift card directly benefits them.
I think the fact that you are providing so many great products to students in the kit and giving them the incentive of the bracelets should be enough.
I used the survey as part of the completion grade of the unit.
I would include a picture of the element from the kit next to its name in the survey or at the beginning of it, kind of a visual help for second language learners.
I would like to see this program offered exclusively to 6th grade teachers. We had a number of students this year who had already participated in the program and that was frustrating to figure out ways to engage those kids who had already participated.
I'm not sure...I have struggled to get families to return them all three years, but that's not uncommon for other forms that go home either. If there was an additional survey that was kid-friendly, I could at least get information from them while I have them in class.
Incentives!
It needs to be much shorter, less time intensive. I can't remember, was it in Spanish? If not, it would need to be for our students to more fully participate.
It was worth points in my class that help them earn extras-like recess, free time, etc.
It would be great if these topics were included in the district curriculum.

Value
Kids like candy! :)
Make it a graded activity for their Science Grade!!
Make it online submission
Make it shorter - many families didn't turn the page over.
Maybe a deduction from their family's energy bill for the month?
Maybe have teachers make the form extra credit towards a science grade.
Maybe make a coloring page on the reverse side as a competition that could be awarded to a few lucky participants. Sort of like Race to Read.
Maybe offer for parents to receive a free gift for entering an email on the survey.
n/a. I think the incentives for kids, and incentives for teachers are enough to keep this motivating on all ends. Students that couldn't install everything did at least their part, even if that meant one change. 8)
No suggestions
No suggestions. I like the hand delivered surveys by students to be sure they were engaged in program
None
None - the only reason I didn't get better participation is because many of the families had already experienced the energy kits with previous siblings.
None at the moment. I like the program.
None at this time. I can't remember if shower timers we in this year's kits. Kids loved them and enjoyed using them at home.
None; students have big interest/buy-in
None. I think the program is great and the information is so important.
Not really sure. I've wondered that myself
Not sure--it's tricky if we don't have buy-in from parents. I wonder if it could be made a little bit easier for kids to understand if they don't have parent support?
Nothing specific. Keep up the program!
Offer candy to those kids who turn it in on time. :) Who doesn't love a sweet now and again?
Perhaps a different "reward" other than the glow-in-the-dark band would be helpful. They didn't seem too impressed with the bands this year. I think the rings that were offered for another reason would be more enticing.
Perhaps, an online blog or discussion format to get multiple grade levels and states communicating about energy efficiency.
Please continue this great program for students and their families.
Please have them the same in English and Spanish and take all Spanish forms. Transferring responses was difficult
Possibly offering some sort of incentive for parents to help their students fill out the survey (energy cost savings/one time discount). Kids don't know all the answers to the survey questions by themselves, and parents did not make time to help them.
Prizes are always helpful so the wrist bands usually work depending on the group of kids.
Reduce the number of items in the kit. Keep it to a few important materials that would make an impact. Reducing the length of the survey would also encourage completion.

Value
Some type of classroom rewards incentive (donuts, pizza, etc) might be helpful, but the teacher could use the rewards card for a part of that reward.
Sometimes when I have students in the same family that come to my class year after year, it is hard because they have already installed a lot of the energy savers. Of course they still enjoy the light bulbs and parts that can be done repetitively.
The information was sort of confusing for some of my parents. They didn't know how to properly fill it out. A little bit easier language would have encouraged more of my parents to complete them.
The online option is a great help!
The wristbands were a good motivator for getting the surveys returned.
This comes down to teacher expectations. I do not believe Xcel can do any more to help students bring in student surveys.
We completed the surveys in class because they answered them in their books. We copied from the book and turned them in. They liked that I get money which in turn, I spend on them.
We did the final survey as whole class. There was no trying to get them engaged. We also talked about the survey after they did it at home with parents.
We did the surveys in class online this year. It went better than previous years and I am sure will grow again next year. Online options helped.
We did the surveys in class together, but the toughest part is the lack of participation from our families. The kids are always excited about the materials, but a lot of them don't have anyone to help them at home. It's a constant battle and, unfortunately, I don't really know how to solve it.
We did them in class. Otherwise, I wouldn't get any back.
We have never had a problem with students returning the surveys.
We took the surveys online in school as a class.
Worked well - we gave the first class to get them all in a popsicle party.

25. Did you mail back all of the student surveys that you received?

Value	Percent
Yes	67.9%
No	32.1%

26. *[If Q25= b]* Why not?

Value
Busy at the time.
I did not receive all the surveys back and I was enrolled in the fall program but didn't end up teaching it until January, so our program due dates expired by the time I got the surveys back.
I did not receive even half of the surveys. Next time I will have them do it at school.
I didn't feel like I had enough to send back and the kids who completed them did them quickly.
I received back only 1 survey
I received like 60% of all the surveys, and also most of them were incomplete and past due.
I used my materials from previous years, and I wasn't sure if I should or not.
I went on paternity leave. They were lost.
Turned in late after the deadline.

27. *[If Q25= a]* Did you mail back 80% or more of your classroom's student surveys, qualifying you for the $25 gift card?

Value	Percent
Yes	97.5%
No	1.7%
Don't remember	0.8%

28. *[If Q27= b]* Why not?

Value
I did send back 80% but clicked the wrong button and it won't let me go back
I thought they were mailed, but apparently they were not received and I did not have them here. Our 6th graders have done this program for many years. We find it beneficial and have returned the surveys.

29. On a scale of 1 to 5, where 1 is not at all likely and 5 is extremely likely, how likely would you be to recommend the Xcel Energy School Education Program to other teachers?

Value	Percentage
1 – Not at all likely	0.0%
2 – Not very likely	0.0%
3 – Somewhat likely	9.2%
4 – Very likely	37.0%
5 – Extremely likely	53.8%

30. On a scale of 1 to 5 where 1 is not at all satisfied and 5 is extremely satisfied, how satisfied are you with the following parts of the Xcel Energy School Education Program?

	Educational curriculum material provided by Xcel Energy	Measures provided to students in the Xcel Energy School Education Program Kit	Student worksheet	Enrollment process for participating teachers	Interactions with Xcel Energy program staff	Participation incentive amount	Xcel Energy School Education Program overall
1- Not at all satisfied	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2 - Not very satisfied	0.7%	0.7%	2.7%	0.0%	1.4%	0.0%	0.0%
3 - Somewhat satisfied	14.7%	12.1%	28.0%	4.7%	12.8%	2.7%	7.4%
4 - Very satisfied	58.0%	53.7%	45.3%	52.0%	48.6%	46.0%	49.7%
5 - Extremely satisfied	26.7%	33.6%	24.0%	43.3%	37.2%	51.3%	43.0%

31. What suggestions, if any, do you have for improving the Xcel Energy School Education Program?

Value
Changing some of the materials in the kit or allowing families to bring in old bulbs, etc to recycle them properly with Xcel would be nice.
Have an online interactive site for students to engage in.
I did not use the curriculum and lessons very much this year due to my lack of preparation. I plan to do a better job with it in the future. I think it is very valuable.
I don't have any suggestions on how to improve your program. I've seem a few different ones and yours is (hands down) the BEST!!! The only suggestion I have is that you allow teachers to choose when the kits arrive. Districts are asking teachers to teach content in a certain order throughout the year and sometimes your kits are only available during the wrong time of year. If we could align the timing of your kits with when we taught the information (according to the district's calendar) it would be easier on the teachers.
I feel as through the program is very helpful in providing families with the supplies they need to be energy efficient.
I feel the program as a whole is awesome
I had my kids turn in their worksheets to me and then I entered their data online for them. The paper worksheet PLUS the online worksheet is a bit much to ask for families to complete and the mail-in of the physical worksheets has snail-mail's rate of turnaround. Not good. I did what I thought was easier for my families and quickest turnaround for me.
I like it just the way it is!
I like the online format. Wondering why $25 gift card for returning surveys was never sent.
I would appreciate if I was able to teach these lessons when they fit into the 5th grade pacing guide. Because of the

Value
Xcel Energy timeline, I had to stop and teach these lessons in isolation and revisit them later in the year when completing the Changing Earth Unit.
I would love for there to be a representative that could come to class and do a presentation about their work and talk more about energy conservation
I would love more resources, including someone to come out and teach about some of this stuff, videos, explanations or keys to teaching your lessons. I felt like if a teacher didn't have the background knowledge, it could be difficult to teach these things as effectively as possible.
I would love to have videos to support the curriculum. Many of the activities in the guide take a lot of preparation, which caused me not to do them!
I would really like to see more age appropriate material for middle schoolers and possibly more project based activities.
Include the possibility of related videos the students could watch or members who could come to the classroom to do an in-class seminar
Incorporate modern technology: interactive website, online worksheets, online games.....
Is it feasible to provide the materials that are required for the lessons? This was also a deterrent as to why I did not teach all lessons (I can't afford to purchase all the supplies on my classroom budget).
It would be nice to a second kit type with different contents for younger siblings who had an older sibling go through the program. The curriculum is fine to duplicate but families who installed all the items get two of everything and the second, younger kid doesn't get to experience the same impact of your products.
It would be nice to have the introduction video/slide show in a streaming format rather than download. I would also be open to having someone visit the class to help them connect to real people who do this work--similar to the programs the zoo and the Museum of Science and Nature do.
It's great and easy to use - I don't feel that is interferes with all of the other skills/ standards I have to teach. It's all good!
keep doing it so our kiddos can learn about the earth and how to take care of it
Keep doing it. It is a great thing that you are doing.
Making the forms simpler for families - we are Title 1 and don't have much parent involvement.
Maybe partnerships with someone from Xcel? Denver water sends out a member of their team to show how they treat water and to allow the kids to answer questions. Maybe a real life Xcel team member could visit and give a short talk on their job.
More writing space/work room for student responses in the student workbook.
My biggest suggestion would be to allow me to choose when to use the kits. Because I coordinate the teaching of my science units with my colleague who teachers our social studies units, I can't align my teaching with your dates, especially the deadline for returning the surveys to earn a gift card. I teach science to both classes of 5th graders so the beginning of one unit until I finish teaching it to the 2nd class is 6-7 weeks.
My students enjoy watching the video. If Xcel created more in-depth videos, I would show those to my students. Fifth graders in my community are VERY interested in energy conservation and protecting the environment. I would love to see some device or whatever where students could actually measure energy savings. I think that would get their attention. Sending short follow-up lessons could also work so this does not just become an isolated "event" at school, but rather behavior-changing.
n/a

Value
N/A
No suggestions
none
None
None at this time.
None, more reliable thermometers
None.
Online interactive information format/website.
Please accept the Spanish forms as they are sent in. It is very time consuming for a teacher to transfer them on English papers and I can not translate what parents said.
PLEASE, make sure that it is only given to 6th grade students. It is frustrating to have students that have already done the Excel Energy Program and received the kits. They tend to check-out. For kids that haven't received the kit before, this is a hugely successful program.
Suggestions on where to find certain material like the ceramic magnets or hand generator (or how to build one)
The reason many of the lessons were not included in instruction were based off our continuum of instruction - natural and renewable energy is instructed during and after the holidays. Based on the time frame we received the kits, we did not incorporate many lessons.
You all make it SO easy on us. I really don't have any suggestions at this point. I think you are very generous with all parts of your program.

32. Are there any household energy efficiency items that are not currently offered in the Xcel Energy School Education Program Kit that you think would be useful to include?

Value
A motion bulb for the porch light?
A timer for shorter energy usage
A way to test seals of doors/windows?
Can't think of anything
Carbon monoxide detector
Hose nozzles
Keep nightlight - kids love these
Leak sensors for fridge, toilet, washer/dryer, etc.?
LED recessed light bulb
N/A
Outside hose water flow blocker
Outside water control
Power strip with phantom load shut off plugs (maybe even one for the classroom)
Rechargeable batteries and charger? probably too expensive?

Value
Shower timer
Shower timers (I received one when I moved into my new house and it is very useful)
Shower water timer
Small solar charged light etc. to show solar power
Solar light for outside
Some way to recycle old bulbs
Something to remind students to turn off the lights when they leave a room
Student idea: a timer for the shower to know how long we're in
Window insulation
Different size LEDs?
Filling in cracks in doors
Higher lumen LED
Keep shower saving device
N/A
Sprinkler water auto gauges
Student idea: manuals about how to make other kind of energy
Timer for lights turning on and off
Weather stripping for doors?
N/A
Smaller bulb (LED for other nightlights?)
Dimmer switch??
N/A

Thank you for completing the Xcel Energy School Education Program Teacher Survey!

Lastly, please enter your full name and email below so we can send you the $25 gift card for assisting in our research. As a reminder, you will also be entered into our raffle for a chance to win one of two $100 gift cards

APPENDIX F: TEACHER INTERVIEW RESULTS

1. How many years have you participated in the School Kits program?

Value
Good question, I want to say 3 years maybe, its been a few.
At least four
I want to say 3 or 4 years
3rd year this last year
2 years, last two
1 year
At least 5 years, not sure exactly. I think maybe one year and dropped it? Fairly consistent for last 5 years
4 or 5
Been at Pear Park for 5 years and done it every year, maybe 4
5 or 6
I want to say 3 years, next will be fourth
7 or 8 years, maybe more, been awhile. At least 7, maybe even long

2. And do you plan to continue participating in the School Kits program going forward?

Value
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes
yes

a. Why or why not?

Value
Great question, my inquiry would be that our area moved, I've taught 6th grade and that was moved to middle school so we're K-5 now and I don't know how that will work now that I won't have 6th grade at elementary level. I would love to, and it does fit into curriculum where we have 6th graders and there's some content on renewable resources, I think that fits in 4th-5th grade too.
The kids like getting hands on materials so that's great
I teach in low income school so I think the kit is great for families that are struggling…light bulbs alone are so expensive so its great. I think it's a great benefit for them
I think the first couple of years I wasn't sure exactly how to use the program, and this year I adapted a bit and found it to be really useful and made it real world application
Well, it aligns with one of our science units and it happens at the time of year when we happen to be teaching it, we really like the kits, so really good hands on talking point, brings some fun to classroom around testing time
Because it was my first year, I didn't learn about program until a little later, I didn't have as much time as I would like, I wasn't expecting what I got, so many activities I would have included a lot more next year, keeping that in mind I would like to set aside more time
We hope to, need approval from principal and we are getting a new principal but I don't know why she wouldn't allow it
I think it's a great program that ties right in with my 5th grade curriculum
Absolutely, been working well, wonderful program that aligns well with what we are doing with renewables. And it follows up with 4th grade standards, its great
For sure, love it!
We love it!
We love it

3. During the web survey, you mentioned that you first learned about the School Kits Program by [Q9 web survey response]. Is that your preferred way to learn about new program opportunities?

Value
You know it doesn't matter, email, phone call, it gets so busy, I think we probably had an email too but the phone call was more personalized way to learn about it. During the school year trying to keep our heads above water, it's so difficult to focus on something like this. We get so many emails its tough to get to that. The phone call makes you focus on it right now
Honestly for me, yes
I think so…I have a lot of, I don't know where she got info but she had signed up and passed along the info to us. I know a lot of things came from her that had done it before
Usually through teachers is best because we have so much to cover that when we can just talk to them and hear that it worked well for them so that's definitely how I prefer
There have been a few other programs with mailers for and I'll hold onto them in my mailbox so I'd say email and mailers are best

Value
The referral was nice, I like getting flyers but for me the word of mouth is a little bit, the issues with flyers is some times I get so many, I don't know all that it entails or if it's worth it or not. Which one to prioritize
For school setting, postcard is the best line because emails sometimes slip through and then you forget about it. I think it was just a postcard. I put it under my calendar at work and it reminded me until I got to it
Not necessary
Yes and no…I'm inundated now with all types of email however because I'm familiar with Xcel, it was a little easier to pursue further but every day I'm inundated with all types of emails.
I was kind of guessing but yeah I think so…lots of teachers just delete email, I think word of mouth is great if you can do it. We do a lot with water usage now and the kits fit right there
I want to say that because it was probably science related, I'm sure I deleted it, get so many emails. My teammate who is science person saw it though and was really excited about it. It's bound to get somebody. I feel like email, we live in lifestyle of hearing computer ding and if anything the subject line flashes across so I feel like that is best because we are so busy all the time
Yeah through somebody, through Xcel or somebody that organizes the kits sent out request and asked if we were interested and I was already doing renewable energy material so it fit perfectly into what I was doing….email is best

a. [If no] How would you prefer to receive information from Xcel Energy about energy saving opportunities?

Value
n/a
When I get something in my mailbox I tend to look at it more, we get so many emails that I sometimes don't look at them all
n/a
n/a
Mailers are good too, sometimes I get too many emails they just get lost
Flyers would be nice but I don't know if I would have looked at it, same with email type messages. Social media through Facebook or something might be helpful for certain things, I like hearing teacher input through that
n/a
Probably emails, because trying to reach teacher during the day via phone is going to be impossible
Mailing maybe that captures attention
Word of mouth; mailings would be great
n/a - phone calls go straight to vm during the day
n/a

b. If changes were made to the School Kits Program, what would be the best way for Xcel Energy to contact you regarding the changes? [Probe on phone call, email, mailing, AM conservation outreach, etc.]

Value
Phone call and email, both would be great
Now that I'm part I think email would work since I open them now. Anything new I typically don't open them
Email would be best
Email is the best
Email or mailer
Probably email
Mailings are great, helps things stay up front center
Email would be best for me, maybe the mailing would be great too. In line with conservation, email might be best
Well I don't know if you like my answer but I think if you were to send out a physical kit, not just pamphlet or flyer, but sending something out that really is extensive, I just won't do it, don't have time. I think just front back mailing would be good, better than email
Personally all of the above, email from Xcel might get noticed
Email update for sure
Email is probably the best unless maybe changes like eliminating the program but I don't always see email necessary as something new so something big a phone call would be good

4. Have you ever referred another colleague to participate in the School Kits Program?

Value
I know that my teammate, even though I do science, which is usually the easiest way to fill in, they did it this year as well. The year before, the 5th graders did it as well, I encouraged them.
yes
yes
no
no
no
yes
yes
yes
yes
yes I tell them all
yes

a. [If yes] Approximately how many other teachers have you referred and how many actually ended up participating?

Value
3
There are 4 5th grade teachers and we all sort of started at the same time. I got the mailer, contacted Xcel to see what we needed to do and learn more about the program and then I told hem about it and we all hopped on board
I can't remember exactly but they did participate. I'm pretty sure most of 4th and 5th grade at school have done it. Maybe at least 3
n/a
Our whole grade level uses it, I haven't had a lot of other contacts with other 5th grade teams
n/a
Added my other 5th grade counterpart, holding just for 5th grade right now
5 to date and they have all enrolled in program
All of my other team, 3 others here that teach 5th grade and they are all on board. At first I just registered them but now that they are registered, they love being part of it
I worked in Douglas County for a while and a teacher told me about it and now I'm in APS and have gotten new teachers the last 3 years. At least maybe 3
No one else has really gotten into it though. We are so big on renewable resources, were at a training right now on project based learning and this is going to be a huge question next year for 5th graders, how can we take care of community and environment? So 5th graders are in charge of school recycling, make solar houses, everything Xcel sends fits so well....maybe other teachers see it as too much...
A couple found out and asked, don't know if they followed up but I sent them the contact info I had, most of it was in passing at conferences and what not. Other folks asking what we did and I would give them that info

b. [If no] Would you consider referring other colleagues in the future?

Value
n/a
n/a
n/a
yes
yes
I would but I don't have any other colleagues that would be eligible to participate
n/a
n/a
n/a
n/a
n/a
n/a

c. [If no] Why have you not referred any other colleagues?

Value
n/a
n/a
Just matches with 5th grades and all my other 5th graders already do it
Just no one else there right now
I would but I don't have any other colleagues that would be eligible to participate
n/a
n/a
n/a
n/a
n/a
n/a

5. During the online web survey, you mentioned that energy efficiency and reducing your own individual energy usage is [Q8 survey response]. Please describe why you feel that way.

Value
I think it's just so important for everybody in this day and age. I even try to teach my own kids too on what are ways we can reduce. Turning the lights off, water off, we program thermostat when we're gone. We don't run AC when we're not here, we also have attic fan so we are always trying to be aware of our usage and ways to cut back. We use fans sometimes instead of AC, always thinking of ways to be smarter. Worked with students this year and got into recycling parts as well, they formed groups on that and did whole school recycling assembly, containers for the whole school...research on plastic bags and how bad they are for environment. They took what we learned and took it a step further
Two young daughters so just teaching them about conservation and not wasting so we have a good planet for generations to come is something I think is important so I teach my students about that too.
Well I just feel its good for environment; I grew up in Boulder which is always environmental. I've always been big on recycling part, but now I adjust thermostat according to seasons, not running Ac at 68 in the dead of summer, solar is huge here, I don't currently have it but if I could I would. I think saving water, I try to be conscience of turning it off while brushing teeth, shorter showers and all those little things
Part of it is that my husband works in battery production so we are very much in the realm of usage of nonrenewable resources and his main application is with cars and EV. In our own home we put in solar, owned an EV, and looking to get another. We've installed nest thermostat and did some things like that, prefer the resources we available to us
I guess just on a lifestyle level, we try to be a little more energy conscience and have a lower impact. My husband is a consultant for a company that consults for different energy utilities so a lot of the decisions we make are based on things he researches at work, we could be doing more but we don't have AC, we use natural heating and cooling and turn things off when not using them. Dishwasher or laundry at peak times

Value
Right now its somewhat important because my rent is all inclusive and not paying energy bill so I have no idea of the costs. However, because I have paid electric bills for years, conscience of not leaving lights on or being careful to not waste all the water, always trying to conserve usage. Just not super important because I'm not seeing the bills anymore
I think that as we as the US, and Denver area, is going by leaps and bounds, in 23 years it feel like it's doubled. I think that our carbon footprint, if we can be EE and teach to our children it will only make the world a better place
Nothing special but I recognize that the planet has finite resources and I do believe in global warming and not a proponent of digging up the earth through mining and how we obtain natural resources so anything to reduce that I'm a proponent of
With my students it's really important, especially in my demographic, low socio economic region, and specifically for them, people aren't home or they just don't talk to them about things. For us, touching on little things like water usage during bathroom, turning lights off, and explaining the benefits, its really important for me to teach that
We talk renewable resources a lot and we do a lot talking about fossil fuels and I tell the kids I think it will be such a dilemma in their lifetime that they face. We do lots of reading and research and see how much energy we use. I'm just passionate about that. A lot of families are unaware so I think its important to educate about that
We have an appt with someone coming into talk to us about solar for our home…its just so important to us. One of the students this year, her dad is VP of something with Tesla and he came in and explained all about Tesla and explained about the battery. And for me, everything, right now my life is consumed with recycling plan at school but even collecting plastic bags from snack class and showing them how much waster there is. Just constantly talking about it I guess. Now that I'm adult I think about things like turning the lights off. I wish some things, for my family, we can talk about solar panels but I wish we could afford Teslas and things but things like that. I think if it becomes more common in everyday use, maybe things become more affordable
Every year I use one of the kits myself to make sure all lights are LEDs, water rescrtters. Worked on getting irrigation system more efficient, home more EE, all energy stare and redid furnace and made sure that was EE furnace. And EE AC. One of the projects I had kids do was energy audit and then they act as energy consultants for fmail and make recommendations for family and then go beyond that and look on Energy Star website...I'm the energy coordinator so I promote EE to other grade levels

a. [If "very" or "extremely important"] What, if anything, do you do individually to try and promote energy efficiency and reduce your own individual energy usage?

Value
I think it's just so important for everybody in this day and age. I even try to teach my own kids too on what are ways we can reduce. Turning the lights off, water off, we program thermostat when we're gone. We don't run AC when we're not here, we also have attic fan so we are always trying to be aware of our usage and ways to cut back. We use fans sometimes instead of AC, always thinking of ways to be smarter. Worked with students this year and got into recycling parts as well, they formed groups on that and di whole school recycling assembly, containers for the whole school...research on plastic bags and how bad they are for environment. They took what we learned and took it a step further
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Value
Part of it is that my husband works in battery production so we are very much in the realm of usage of nonrenewable resources and his main application is with cars and EV. In our own home we put in solar, owned an EV, and looking to get another. We've installed nest thermostat and did some things like that, prefer the resources we available to us
I guess just on a lifestyle level, we try to be a little more energy conscience and have a lower impact. My husband is a consultant for a company that consults for different energy utilities so a lot of the decisions we make are based on things he researches at work, we could be doing more but we don't have AC, we use natural heating and cooling and turn things off when not using them. Dishwasher or laundry at peak times
I was raised in Midwest with well water and we were on rural electric power source. My parents instilled in me that you don't waste water because it was supplied by aquifer, and as an adult and mother, I try to pass that on to others. We only have limited supply of resources. So I always try to limit my usage. If you're not taught about EE than you take things for granted. This is a prefect age as 5th graders to start to form their own opinions and are starting to think as individuals so teaching at this age helps instill in them that this is the one thing they can control and be resourceful. If you can make a choice why not make the right one
As for me, I've installed al the kit measures plus use a hose sprayer, EE insulation, window sealing, all that stuff
In my own home we have thermostat that is programmed during the day and then when we get home. And I think the kids start understanding average temperature and what is comfortable and understand how they could lower their temp in the summer when it's hotter. I think those are things that are just good convo pieces for kids and teaching them...really ties into the whole kit material
In my own homes I've used the kits, used light bulbs, aware of water usage,
See above
n/a

6. In your own words, please describe why you decided to participate in the School Kits Program?

Value
What I really liked was just that real world application where not only is it just covering curriculum but its "how can we help students take this into adulthood and teach to their families and be more responsible with their footprint?" I really like that's part of it, something they can apply outside of school
Well it was free and the kids got hands on materials and we got lessons to go with it so it wasn't something I had to create. It also goes along with 5th grade curriculum which is a plus on one hand but on the other hand, in order for us to reap the benefits of the gift cards we have to have everything sent in my 12/31 and that's hard for us because we don't get to that unit of study in January or February. We kind of have to do a whole day of energy conservation type things and its one day and done and then we revisit in January
I think honestly the gift card initially. I then saw the benefit of it after talking to parents and they all commented on how great the kits were and you know a lot of parents have even asked for more kits. They definitely see the benefit
We have a standard for 5th graders in CO about renewable resources and its pretty similar to what they learn in 4th grade so we wanted to find a way to build on that instead of repeating it. So when my teammate found it we thought it would be a great way to bring the convo home to households. My first year I just did the welcome video and sending the form home and didn't have much success but now we have more success by teaching the material more and improve the convos around those standards

Value
We didn't really know how well it was aligned…at that time, they were sending us kits, we didn't have to pay for it and we got a gift card to do something so that was pretty motivating at the time.
I got switched, I got 6th grade science added to responsibility and the teacher who taught it previously used it and she was talking to me about it and because it fit right in with the curriculum. So because I knew it was going to fit with curriculum and she had talked about, one activity in particular that really was helpful in grasping some of the concepts with regards to their persona lives. As we talked she said I should check it out so that was what made me do it last year
Well I think for all of them, I feel strongly about teaching the kids young what they can do to promote EE. Great way to bring science into their homes. It's a great talking point and I don't think kids have enough time with their parents one on one. And I make it an assignment; they get 100% for bringing the form back. Something that isn't quite optional. I build it into science curriculum. I think its a great responsibility for child and parent to work through it and spend some quality time to mom and dad asking bout thermostat, and what's our purpose for not changing furnace filters or something like that. I think its a great convo and learning tool for not only the child but having the ability to work with family. It's hands on and not just pushing paper. Great way to open convo with parents. And we are giving the parents something substantial and asking them to have convo with child
Probably first and foremost it connected directly to our 5th grade curriculum of our energy curriculum. I think educating future generations from the beginning when they are little to crate good habits to be a mindset, as opposed to trying to change people, is a far better long term plan than waiting till they are adults
Initially was just for the kids to be honest. They don't have materials like those in the kits so as educators, any time we can get free stuff to utilize that was my initial draw. Since then, I've implemented a lot more lesions, which has been great. First year was not very deep but now I do. Now that I understand curriculum better I can use those lessons more in-depth. And then sometimes what we do, a lot of kids won't go home and do it so we will actually do some of those experiments in the class like with the aerators on the faucets and talking about light bulbs. We take it into math side and look at difference based on what type of light bulb they have in their homes and look at the cost difference and see how investing in EE upfront can actually save money long term...good for environment and pocket book
Helped educate families, I tell the kids how excited their parents will be about getting free stuff….it really does a good job of educating families and the kids get really excited about the kits. When they fill out the surveys and what not, I think it does make them more aware
It aligned really well with our class, and the kids get so excited about the boxes and we tell them to just dive in and they are so excited.. The way things change are explaining things to kids…the gift card is so generous, even walking out with teammates everyone loves that
I just think its great thing. My kids last day was yesterday and I had them write what their "a ha" moment were and 2/3 said realizing how much energy we use and how much we can conserve…wealthy kids for the most part but they are looking at how their impacts impact those around them. For me it ists an environmental thing. It's a passion of mine. We go beyond the kit itself and we go into much more depth. One of the big things is kids have already installed some of the measures and I tell them to put them in there as extras or replacements...A lot of homes here have some of these things and can't use all these things.... would want to add use these when old technologies are not working.

Next, I have a few questions regarding the educational material provided as part of the School Kits Program.

7. During the web survey, you mentioned that you [Q12 web survey response] have energy conservation content included in your lesson plans before you decided to participate in the School Kits Program.
   a. [If "did have energy conservation content] In what ways did the education material provided as part of the School Kits Program support or replace the existing curriculum content?

Value
n/a
So last year we had lessons but we didn't use them because we only had one day to use it. Then in jan and feb we didn't go back and use the Xcel lessons because the kids had taken them know…I create some new conservation material to include in January
One of our science plans, we teach weather on earth, a section just on weather related energy, all types of energy and we are able to tie those lessons in to the kit material…its become more of an add on or supplement
So our standards are pretty vague and our district has not purchased anything with regards to teaching materials to use so we have patched together online resources but it never sunk in and now we use the energy kits as the primary tool to teach this lesson and what we increased this last year we looked at three levels 1) home level 2) school level 3) and speaker from our town that's our sustainability coordinator for our city and they come in an talk about it and figure out a way to be more sustainable
Well the book sort of replaced any texts, the video replaced the text we were using too for our lessons. I would say that one of the big things was the learning materials on how to use the materials in kit so they hadn't seen that before. I think before the unit we had planned was more disjointed and not a common thread but it gave us a theme of EE and conserving resources and how do we get those resources. i think the kit has helped in that a lot
So the textbook that we have talked bout conservation so when I looked at Xcel materials, I tried to pull out the practical applications like who much does your family use, how many people in your family, this is how much water you're using, etc. I remember that activity being impactful for students to realize how much energy or water they are using. seems to me that those activities help you figure out practical thing's that let you know how much you're using. i tried to use the practical activities, i hope to use more in the future
n/a
Well the booklet gives them additional secondary sources on, references for them to read from what I would say is a primary source. Xcel's materials become primary and it think its great for them to have the at home lab to implement all the concepts that we are dong in the class. Hard to say here's what's happening in class and then they go home and fall into some routine. This gives them a concrete activity to work with and because it was a direct connection with what we were learning, it was perfect. I loved the fact that it ropes in the families and works for outside of school and lesson planning. Its a nice family activity for families to do
I think just utilizing it more now that I have a greater understanding of curriculum. Not necessarily changing the kit material but for me knowing the standards…not necessarily energy conservation but we do an energy lesson and do renewable resources so the kit lends itself well when we talk about other types of energy
n/a
n/a

Value
Well it's more of a supplement. We use it as the basic level. I have kids to research on EE in smaller groups and say do the bathroom. So they will start with curriculum on the bathroom and start with the kit material and then go beyond that to floor materials and that more detailed type of things. Use those things for water use baseline say but then go beyond that. The book you have has some stuff on lawn but we get into that in great detail and talk about water consumption for landscaping. So we definitely go beyond

b. [If "did not have energy conservation content"] Why did you previously not have any energy conservation material included in your lesson plans?

Value
You know it honestly just comes down to time. We are just always so rushed for time and moving onto the next unit…truly its not that its not important, honestly just trying to fit everything in is tough
n/a
n/a
n/a
n/a
n/a
We had the reuse, recycle, renew and our book touched on a little bit about how to be good stewards and try to be EE but it was just words on paper and where as, if you can teach side by side and talk about it, I also like the info because it's a little more technical than what our book gave us but not over our heads. Letting the kids play with it and ask the questions they need to which may be better than book questions
n/a
n/a
Just our standards. It just wasn't part of curriculum so it wouldn't have been as easy
I feel like not necessarily conservation but we did review and identify things. Kids are tested on science standards in 5th grade and we try to recap things and everything is super matching based before the test. The kit took it to another level and they get to take it home and save energy and it's that easy. Its a great model for them to learn
n/a

c. [If "did not have energy conservation content"] Were there any challenges you observed trying to integrate the energy conservation material provided as part of the School Kits Program into your classroom teaching environment?

Value
It was very user friendly, teacher friendly, honestly the only downside is the timing, trying to fit everything in. picking and choosing what to include. But everything was really worthwhile and the kids were really excited about it and found it really interesting. It wasn't anything other that time
Timing (see above) that would be the only thing
n/a
n/a
n/a
n/a
You know the only challenges I have is were a private school and I have 7 preps to do so my challenge was just giving it what I wanted to give it because sometimes I only have so many minutes for each subject so I have my own guidelines that I as a school/teacher have to hit. My biggest challenge in the beginning was giving it enough time because sometimes i give more time on it than i really have minutes in the day for. I found ways though around that because I'm able to build it into literacy block because the info is good and we can read it and build it into vocab. The first year I didn't really I know what I was doing but as I have been able to expand I can justify it being cross-curricular into many things
n/a
For me not so much now, I would say again, it's always time consuming and having time to learn curriculum. Awhile ago I want to say there was a hands on half day lesson where we got training, not sure if it as through Xcel or not but that was great. They brought it training and incentivized it for teachers and we learned how to teach it in an effective way, for new teachers they just straight up don't have the time to learn how to integrate it because its outside some of the standards
It's the time of it. Expected to follow curriculum you're given so you can feel pressed for time…I've adapted over time. Another challenge might be that we, I was new to school so when I ordered them in the fall, they had to be returned by December and my team said we don't teach until the spring so we had to talk about the kits quickly in the fall and then go back to the content in the spring
No, so easy. Everything online, emails so easy, just made it part of homework.
n/a

8. You mentioned during the web survey that you chose to not use [Q17 web survey response] lesson plan(s) from the Teacher Guide. Please describe why you chose not to use.

Value
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a

9. [If Q23 web survey response(s) =1 or 2; for each response] During the web survey, you indicated that you disagreed with the following statement: [Q23 response]. Please describe why you disagree with that statement?

Value
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a

a. Is there anything specific that you think Xcel Energy can do to help improve this area of the program?

Value
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a

10. [If Q25 web survey response(s) =1 or 2; for each response] During the web survey, you also indicated that the [Q25 response(s)] was/were [Q25 scaled response]. Please describe why you feel this was not engaging for your students?

Value
n/a
n/a
n/a
The survey I know the students struggle because some of the questions they have to fill out they cant find the answers to or the parents are more resistant. Especially the aerator and showerhead, those are installed the least. Doesn't fit in the showerheads they already have so they students struggle to fill out survey because a lot of holes in the survey. I also found that the kids are most excited about light bulbs so at the end getting the wrist bands its just extra and they throw it away and its just an extra piece not needed after already getting the kit
n/a
I wasn't sure how to actually answer that because I felt like if it was hard to say "5" because that would mean that all my students would bring everything back. But I would say they were all so excited at the beginning and then got the wristbands and whatever, but then not everyone would bring it back. I think with the response sheet, as parents having to sit down and do some stuff, i don't think they can sit down and just check boxes really quickly but they think it's time consuming. The ones that did get the wristbands thought they were very engaging. I was able to get 80% back but for that 20% that didn't makes it hard
n/a
They like the wristband, you know I think engaging is challenging, what else is there to it? I think it's a nice perk but I don't know. As far as the worksheet, they fill it out at home and we do some things in calcs. The pretest is hard

Value
because they don't understand anything yet, you spend some time explaining hey go home and do this but they haven't gone through the curriculum so they don't know the measures. The post test they do fine with though. They still complete both but I don't know how engaging that part of the project is
n/a
Just some kids don't do homework, if you return you get bracelets and I said you get candy if you return it by the end of week. I think it is just about incentives
n/a
Not really a motivator, it's just a free component. The erasers were actually a little more fun

a. Is there anything specific that you think Xcel Energy can do to help improve this area of the program and make it more engaging?

Value
n/a
n/a
n/a
I see it as them not even needing the extra piece of paper and plastic for those things
n/a
n/a
n/a
Not really, its just not that exciting of a part of the program
n/a
I think going online was helpful, and the help videos were great. I think the kids getting started there is a great way
n/a
Continue to find fun things that actually engage the kids, the curriculum is really what drives the kids. A couple of years ago they actually pointed out wrapping the bracelet and that was wasteful to the kids

11. Overall, do you have any other specific suggestions for improving the educational curriculum to better serve your needs as a teacher?

Value
no
not that I can think of off hand
yes
yes
maybe
hard to answer
You know I like the way it's done, I can't really think of anything right off the top of my head. We did it back in march so it's been a little while. It's very user friendly and I appreciate that. Booklet is very user friendly for parents to be able to go through and have talking points. Right now I really like it
I think it's great, one thing I said in survey
maybe
None that I can think of, feel like it's doing its job. I've had a few newer teammate that think it might be a lot but once they give it a minute they figure it out. This year I felt like it was easier for kids to understand
no
yes

a. Please describe.

Value
n/a
n/a
I know that having online lessons or even some of the demos type videos would be great for me. Some websites or videos that support kids learning about this type of stuff. Kids are so engaged with video things these days, something that could go along with the kits that could then be hands
One thing that would be cool and I don't know exactly how they would do it but helping kids apply how they can take the things they do at home and apply it to the classroom or when they are out at a restaurant, or wherever. I'm thinking water usage, big thing is turning water off at home but if there was the next level application of taking those ideas outside of the home. That application would be very cool for them I think.... or even if the kids could look online at some type of tool that showed from Xcel how much energy is used in their city. If there were spots in the booklet where they could go on website and look at usage that would be cool to see
I would be curious to see what others have to say in terms of the kid user friendliness of what they do at home. The second section at home where they work through materials at their own house, it's a lot of language and I didn't talk to my own class about it too much but I wonder how much of it they are actually reading and engaging with it because it is so text heavy. I printed off Spanish copy because majority of my students have parents that read and write in Spanish. I kind of sent it home and they were on their home and they either did those things or didn't. Curious if others have had that experience, not really knowing how meaningful the supplementary material is at home because of how text heavy it is.
This year it was overwhelming to me in a good way, not a good judge because I didn't use a lot of it. The parts I used were amazing so don't have any suggestions

Value
Families with multiple kids. Kid 1 comes home and they install the aerator, light bulbs, etc, and then the following year Kid 2 comes and it has already been done so parents are some times reluctant to do it again. You know if they have the aerator from last year and put the new one in, there's no difference and the reduction is lost from the parent and kid standpoint. It would be kind of nice, probably too expensive, but a second kit that involved measuring hose nozzle, like maybe include that in kit or shower heater (?) some unique for 2nd and 3rd kids.
We are moving more technically based so anything that incorporates more links to videos or things like that, that would be great. We have Flipcharts, it integrates with a smart whiteboard type deal, and most folks have some PPT or something like that that has Flip Charts pre built would be nice. We are moving sort of away from just paper and pencil things. Technology is really more integrated and now on our state test, on the science side, everything is interactive so anything that ties into assessment would be really cool. Something about EE or some online quiz something like that...Kahootits, product development may want to look for that. If its as for teachers they would use it...like a jeopardy game and they have laptops and the kids really enjoy it...anything pre-created for teachers is really helpful to save time
Maybe continue to make the workbook easier to understand, not bad though
Its to the point that there is a mixture being able to see the online slideshow, the tech involved is great. It's pretty straight forward. I think you guys nailed it in that way. Not over the top
I just think when they talk about water use, get into landscaping more. Water use outside of the home and then thinking about how landscaping impacts heating and cooling. Utilizing trees on the south side, things like that. My kids get into that. In CO, lots of local plants, less water but looking at drip irrigation. Then also petroleum use in vehicles and things like that. that's a huge piece. I think it mentioned the garage but less about the vehicles. Talk about water heater and furnace which are directly associated with Xcel but the vehicle emission is huge...and I have to tell them the book doesn't have any info to get them started

Now, I have a few questions about the level of influence various parts of the School Kits Program have on your students, including your role in getting them to participate in the program and install the energy efficient equipment provided in the kit. We understand that some of the questions may be difficult to answer with certainty but please provide your best estimate when possible.

12. Prior to distributing the School Kits, how aware do you think the majority of your students were regarding the types of energy efficiency equipment provided in the kits? [if needed: LEDs, faucet aerators, energy efficient showerheads] Please use a scale from 0 to 10 where 0 means "not at all aware" and 10 means "extremely aware".

Value
1 - they really, most kids have no idea. Maybe 1 knew what an LED was, other kids had no idea
2 - LEDs are only reference
Probably aerators and showerheads like a 4…the light bulbs maybe like a 6 or 7
2 - lower
0 - no awareness. Maybe 1-2 on LEDS but we didn't talk much about it until we start unit.
They don't seem to be very aware, maybe 2…a coupe of older siblings had the kits
I think maybe at like a 7. The aerator is probably lower but the kit in general overall, I think we sit in a very tech area of Denver and double income parents that are college grads and affluent. They live in households that are newly built so much more EE anyways so i think the kids coming from where we sit are more aware of some of this stuff than others
1 - they don't know. That number goes up if its multiple kids and they saw their older sibling do it. If they are truly the first child, its 0,1, parents maybe a 2. They might know LED but they don't really get the equipment at all
1 very little exposure, 1/10 families might know, the rest just surviving
1 or 2, they really didn't know, LEDS maybe a 5 or so, something they have heard of
I think most kids might have been aware of LEDS maybe 7-8, but the aerators and other things, they don't know 1-2. I think something like the showerhead, do not replace showerheads and that's mainly a thing on their parents. I teach at wealthy school and they pretty insane homes and their parents
LEDS 8 or 9, the showerheads maybe 3-4, especially how they work. Similar to showerheads maybe 3-4, 1 for the furnace whistle…raising and lowing thermostat component was great them too

13. Over the course of the program, how did the level of awareness and interest in energy conservation change among your students?

Value
I would say it goes up to a 10. Even taking the survey, some kids hadn't installed everything yet but they were definitely wanting to. They all wanted to do all the measures; all of them had installed the light bulb at least, but maybe hadn't gotten to showerhead. It was just a timing thing though
o it goes up to an 8. I think participating really helps them. They really do go home and get excited about all these kit items
I feel like they start to really develop more of a sense of it. They realize how they can compare gallons of water wasting and see some tangible things they can start to understand usage
Increases dramatically, a 9
I would say it changed positively and depended on the items. I think they love the lights and easy and they can do on their own, they really like that. For aerators or whistle, it wasn't quite as much. Overall positive change
Like I mentioned, the activities regarding their use of energy and the cost, I think that activity helped change their mindset to say hey I think this is important, definitely impacted their awareness and interested in conservation
I think it becomes more helpful because I see a lot less waste in the classroom. Don't let the water run, they think about those types of things. 5th grade is a great age because they feel like they are making the choices. Some are extremely overboard and then some don't care at all but most are in the middle where they do try it as much as

Value
possible. After we do the program, we talk about their homes and what they did and what they learned so i have them voice their opinions on how things went, how things are going now and touchback kind of process.
Yes obviously increased, lots of good feedback from parents
I would say that about 60% do. Still growth to be made. If we can influence half of the kids to be more conscious, that's a good achievement in our book. I know some families wont implement because of laziness honestly
Definitely increases. Its been instilled in me I think to turn of lights, do these little things, and I see them at school become more aware. Like the sensor water, they think about those things
Yes absolutely. I think in isolation it might be one and done type thing but we do outdoor education in 5th grade and at the camp, after every meal they collect waste and weight it and it becomes a contest. And 5th graders do recycling so it keeps getting hit over and over again. The science teacher is great about guest speakers...i think the program helped plant the seed for that
Definitely get excited when they get kit, and they learn all about the EE components. The parents like that Xcel cares about EE so we get into peak and intermediate usage so we explain that part of it to them.

14. How influential was the education materials you provided to the students in their decisions to install the equipment in the kit, including the LED light bulbs? Please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "extremely influential"

Value
10 - because at first they think its just fun and cool but then when they see that it makes a different and learn about conservation it opens their eyes a bit
7
6 - I do notice they updated the booklet this year and those were nice. I thought that was really beneficial
8
I think I did a better job this year than last year, we took more info from book and video and supplemented with lessons. Spent a week or more before sending the kit home, explain to them why we are sending home… I think the educational material combined with how I taught and encouraged them would be a 7 or so. I got enough kits so I had one for me but I had one last year so I told class one day that I have extra and if there was something that you wish you had extra of come let me know, and within 1 minute everything was gone
Hard to answer, depends on parents. I think students, when they learn about difference, its like and 8 or 9, they want to do it but then mom and dad…probably 8 or 9
7 or 8. I think that having the kit, it's their ownership and they get excited to work with it. We have a couple parents that pushback that don't want Xcel to know anything about them. It's our area I think. We have a couple of parents that just don't want to give any info or share anything and we respect that and take back kit and give it to students that were ahead that would still love them or if they have bigger houses would like the extra kit components.
8 - if you don't have the link to instructions and the teachers don't provide instructions it will go in garage. I think the fact that you have as a teacher taught the content and did activities, woven into what we are already learning on the topic, I think that is powerful for implementations
8 - I think the education piece, even if they don't implement they know how to. We watch the video, and give them as much experience as we can. They love the therms

Value
9 or 10…if they took box home they would have no idea. Telling them the info, getting the letter to parents as well, getting them info on how to install things, very high
8
I upload ppt and they can access that at home, definitely use it…overall, its convoluted because we do a lot of stuff, I'd say 7-8

15. How influential do you think the encouragement and support you provided to your students was on their decisions to install the equipment in the kit? Please use a scale from 0 to 10 where 0 means "not at all influential" and 10 means "extremely influential"

Value
7/8 - I think they would still be exited but part of it is teacher encouragement and me saying it plays a part
10
8 - I send emails to families and cement the info for them so they don't have to just rely on their child for that. I know I've had families that have children that I've had before that are excited for the upcoming kits
10 it's a grade for them
I think I did a better job this year than last year, we took more info from book and video and supplemented with lessons. Spent a week or more before sending the kit home, explain to them why we are sending home… I think the educational material combined with how I taught and encouraged them would be a 7 or so. I got enough kits so I had one for me but I had one last year so I told class one day that I have extra and if there was something that you wish you had extra of come let me know, and within 1 minute everything was gone
I guess about the same 8 or 9, if I wasn't doing it they wouldn't do it all
8 I hope! I try to make it fun and make it something they feel like its quasi expected. I never make it to the point where if parents don't want to do it I respect that. But I try to lead them with the importance of it and why we do it and how fortunate we are that Xcel believes in EE in order to spend the amount of money to distribute these kits. Usually they will send 40-60 kits a year and that's a lot. I have some marketing background, I know that affects their marketing budget but it's still money out of their pocket and I let them know that look, they are gifting these things to you
8 - if you don't have the link to instructions and the teachers don't provide instructions it will go in garage. I think the fact that you have as a teacher taught the content and did activities, woven into what we are already learning on the topic, I think that is powerful for implementations
8 or 9, the more excited you are in education the more likely they are to install it. Reiterating it over and over is huge for us. Water too is huge
9 or 10, I'm just such an advocate and we talk about how important conservation is and they enjoy going home and exploring their own house
Our excitement, they feed off that..8
I don't require to install and actually have them bring back if they aren't going to use them to make sure they get.. 7-8

16. In your own words, please describe your role in getting your students to participate in the program and install the kit measures?

Value
I think just being exited about it. If I show them that it's great, they think its great. If I show how I use it then they realize they can do it. I think having the education to go with it is important. If you hand the kit only there wouldn't be the involvement, that's where the teachers come in, where you can just have the kit along
If I don't have buy in they don't. Talking to them about how it impacts them now and in the future. They can see that their choices matter, and even though they are kids, here's how you can help. Their choices impact the world
Get them the info and encourage them as much as possible
The changes I made this year that I thought benefitted the program a lot, was we chunked it into small bits, we would take their bedroom and discuss that first with regards to the kits, preview the questions to ask their parents and then give them a couple of days to discuss. Then with light bulbs I'd say it was online a 1-2 day timeline and then with the aerators or showerheads I'd give them weekend or so, so they had more time. Then we would come back into the class and have a follow up discussion and i found that really helpful in them getting to be involved.
I think encouraging them and educating them about why we do it. For me there's a lot about aligning with standards and make sure they are prepared for the school year. Definitely time spend making the material useful and making it meaningful. If I had just gotten the packet and just opened it up and did no prep or thinking ahead, it wouldn't have been as meaningful. It's not a full curriculum necessarily, you have to kind of know how to approach it...transfer the "why is this so cool?" the free part is so cool for them
They need to hear the encouraging words about it to do it
8 I hope! I try to make it fun and make it something they feel like its quasi expected. I never make it to the point where if parents don't want to do it I respect that. But I try to lead them with the importance of it and why we do it and how fortunate we are that Xcel believes in EE in order to spend the amount of money to distribute these kits. Usually they will send 40-60 kits a year and that's a lot. I have some marketing background, I know that affects their marketing budget but it's still money out of their pocket and I let them know that look, they are gifting these things to you
I'm the coolaid dispenser; teachers have a lot of power. I think if I give it value, it becomes valuable. Because its of similar philosophy to my own, because it's in our curriculum, they hear it time and time again they get message of importance, and because of that it gets through to them
Just reiterating it to them and letting them know the benefits
I think just overall support, showing the videos that tell them about the kits and the lessons and everything combined
I just encourage them, show them how to do it and how easy it is. We encourage them and its from another source besides parents
see above

17. In general, which of the following statements do you think best describes the majority of your students' households' actions had you not provided the School Kit to your student?

Value
I don't know just judging with what they came from, I don't know if they would have even purchased those. I really think they would not have purchased without the education and kit
Only if they needed them
This and maybe the burn out. Its either then or not at all, not going out to buy them for sure
They would have purchased and installed about the same number of LED bulbs in one to two years x - and that comes from discussions as some families went out and replaced every bulb in their house and use the whole kit and then others say they want to wait longer
Hard to know for sure and the LEDS are often more expensive so the price definitely matters. Good chance that most would have had LEDS at all. I know I have siblings from year to year so they begin to developing some familiarity with the measures and distribute the measure
Maybe burnout or maybe then or never
Just as replacement. We are a private school, I don't see parents just replacing bulbs without having a need to replace them
As they ran out
X - just not cost effective for them at the moment. Working in high poverty areas, it's amazing to see how money spent
more expensive
n/a
Lots of kids that have none of this. Lots of affluence but maybe not lots of awareness at home

We're almost done. I just have a couple of more questions regarding your satisfaction and any recommendations you have for the School Kits Program going forward.

18. [If Q36 web survey response <4] During the web survey you mentioned that you were only [Q36 scaled response] with [Q36 program part response]. Can you please provide some more detail on why you provided this score?

Value
n/a
n/a
I think that some of the stuff was a little confusing for families to install. Lot of families rent so I don't know if they feel like they can install some of the showerhead and other type things. On certain things we got lower install numbers because of that
Just a little cumbersome, hard to know what that info is used for. Might be valuable for them but hard for us to know. Going online was a big part; I had more success with that. Some of the harder questions make it difficult for them…the aerators and showerhead components. Making it simple to access online was really big
n/a
n/a
n/a
n/a
n/a
n/a
n/a
I think the key for my kids. It's the recognition of what the kids are already doing and what their families are already doing so you can see who are new kids vs those already doing some of these things. That's where it would come. At least 1/3 came back with their equipment saying "will not use" because they had LEDS and I told them that change to "will use" because you will use eventually. I don't want them to be reflected that the don't care

19. On the web survey, you also said that [Q35 web survey response] could help improve the School Kits Program. Can you provide some more detail on how that would help improve the program going forward?

Value
n/a
n/a
n/a
n/a
Well for me personally, I didn't do a lot of follow up with it so I think that would be a piece of it. And even in the program, the kit we get is really focused on getting the worksheets back but there's not a ton of resources to say how do we make that part meaningful? What type of follow up can we do with students on the worksheet? How do we know they are actually getting something out of it
n/a

Value
n/a
I just think of what I do as a homeowner. Even small little kits where you spray soapy water on gas line to make sure it's not leaking. You could just have instruction for that, no equipment necessary. That would be cheap. Maybe a light timer or something where lights turn on or off after certain amount of time
n/a
n/a
n/a
n/a

20. Lastly, are there any other ways you think the School Kits Program could continue to improve going forward? [Probe on outreach efforts, curriculum adjustments, kit measures, increasing student engagement, etc.]

Value
Good question on new kit items, cant think of much though. I love that it's really kid friendly and they get all those hands on materials. If kids find it interesting they will buy in. I'm hoping that I can continue using material even though I'm not teaching 6th grade anymore. I think it can fit into 4th and 5th grade curriculum. I think teachers can make the decision because if it fits into curriculum they are more than likely to use it. If its an add-on its tough because we are so busy already. Like I said, looking at 4th grade, there are some renewable topics and it seems like this would fit into perfectly. I think it could work there though. I think teachers can make the call based on the curriculum.
My kids were pretty interested in solar energy and I don't know if there are any small scale to include in the kit but that would be great to show how the process works. We talked a lot about solar and how we harvest that and I think it would be great to show them how that works. Something solar related would be great...and then the timing...maybe not having those hard deadlines would be helpful.
Hard to say really, I don't know what else to include. I think a lot of families do pass on the stuff they don't use maybe, like give it to another family member. But I think just knowledge is power, just knowing its out there and you know they like most of the kids...i think the kit is pretty great
Hard because I don't know all the resources out there but I think I would encourage anything that is easy for kids to do or takes up the least amount of time. Most parents in my demo are working, lots of after school activities and time is a huge thing. The lights are great in that way, and some of the other things are harder because they take up more time. The kids are excited but its harder for parents to get involved. Don't get rid of light bulbs or night lights...the student booklet is really text heavy too so maybe simplifying that, more diagrams or pictures even...spaces to write it are way too small, cant fit words
I can't think of too much. There are things in the kit that wouldn't have occurred to me because I'm not always thinking about how to reduce things like temp or water usage necessarily. Can't think of anything off top of my head that they could need. Anything that measures draft? Streamer?
As a newbie, I really don't know. Maybe in a couple years when I'm more familiar I would have a better idea
I always think some types of light bulbs are useful. Another nightlight would be great. Having households with kids, they really love those night lights. They like that they are bright, flush to wall, easy to install. I didn't have as good of response with showerheads. a lot of parents pushed back because they felt like the showerheads they had in bathroom was better than the one in the kit. I know when talking to kids, they made their parents install it to see it but I had lots parents take them out and realign their previous showerhead. You have changed out the size of light bulbs, and the

Value
smaller ones have been great. The big bulbs felt more like flood lights, the biggest one we had lots of parents have a hard time finding a place for those. This year, the kit was very well received. They liked, parents with multiple kids, parents got their second kit a few years later and they were super excited about the new kit.
Nope, just the thing about the 2nd kids, overall program is great!
I do like that you changed it to more light bulbs, thermometers were good because a lot of kids don't have that kind of things. I have no idea on cost effectiveness but what about an optional thermostat? Like if you did a survey could you get a thermostat? That would be a big piece for them... In more affluent areas, maybe a rebate instead of kit? Like a coupon type deal on their bill or some incentive for them to lower their usage. Some other way to entice that group. I don't know how to track that necessarily but I think people might be more conscientious if there is a small kickback. I'll actually do it if I know I get to lower by x amount. Some type of algorithm for bill if they
not sure…maybe not equipment, but reminder stickers maybe that they can put by light switch or sink, just little things like that. But just overall its great, I think all the measures in their now are great…..I don't know if possible but if Xcel has guest speakers that would be awesome. we have aurora water folks come in and talk but if possible it would be great.
I don't know if it would be too expensive but maybe some solar power light for outside I think that would be fun…it's an easy thing to do
Probably, not the kit, but the education side would be the landscaping. Things like the whistle don't get used that much, I think that could be taken out….fog lights or recess lighting replacements. Don't have the bigger ones for those applications…some households have older tech that can't be replaced. Maybe outdoor motion detecting lights because a lot of households have those but can't change with current bulbs

Thank you, that is all of the questions I have. As a reminder, we will send you an additional $25 Tango gift card for completing the interview, along with the chance to win an additional $100 Tango gift card as part of our raffle with all teachers that completed an interview.

APPENDIX G: UTILITY BENCHMARKING INTERVIEW RESULTS

To: [PEER UTILITY CONTACT]

From: Jeremy Kraft, EMI Consulting
Hannah Justus, EMI Consulting
Joe Clark, Evergreen Economics

Date: December 12, 2018

RE: Xcel Energy CO School Education Kit Product Evaluation: Utility Benchmarking

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The EMI evaluation team examined six peer utilities to benchmark the Xcel Energy School Education Kits product against others in the industry, assessing product design and delivery and key performance indicators (e.g., participation levels, Net-to-gross). The selected peer utilities are located throughout the country and varied with respect to the number of customers served. However, each of the examined utilities had offering similar to the School Education Kits product with regards to overall program structure, included kit measures, and program implementation. The objective of the benchmarking was to understand the design, delivery, and processes of school education programs operated by the peer utilities and identify potential opportunities to improve the Xcel Energy product. The evaluation team conducted in-depth interviews with four of the peer utility program managers to address the following topics:

- Program design;
- Program efficiency offering and savings processes;
- Marketing, outreach and participation;
- Program successes, challenges, and ongoing changes

To provide important contextual information, additional descriptive program information was collected through online research, including eligible measures and customers, product implementation strategies and marketing strategies.

Results of the evaluation team's analysis of data and information gathered through the suite of research activities are presented in the following sections below:

- Program overview and design
- Key performance indicators – Participations, savings, net-to-gross
- Program successes, challenges and ongoing changes

Program Overview and Design

All six of the peer utilities that the evaluation team reviewed offer energy efficiency kits to elementary or middle school-aged students. All of the peer utilities also use a third-party firm to help

implement the program, similar to the approach used by Xcel Energy.[13] Interviewed utilities noted that the third-party implementers often take on a primary role in regards to program marketing, outreach, enrollment, data management, and kit creation, while the utilities focus on high-level oversight. While all of the utilities rely on third-party implementers, the actual implementation of the programs differed across utilities. Three of the six programs followed a similar structure to the Xcel Energy School Education Kits program, in which teachers enrolled in the program and received educational material and kits to distribute to their students. The other three programs incorporate a structure in which program staff provide in-school presentations for teachers and students to help promote energy conservation and increase overall awareness of energy efficiency. The in-school presentations are typically completed by program support staff, which include third-party implementers or contracted educational partners. One of the programs also offers households the option to participate directly via the program website as long as they are in the utility's service territory.

Table 1 shows some of the key program structure metrics across the peer utility programs. In general, the energy efficiency kits included similar measures, and the targeted groups were relatively consistent across utilities. However, certain utilities have expanded their programs to reach a wider range of students and teachers and have created targeted material that is age-appropriate depending on if the participant is an elementary school or a middle school student.

Table 1: Peer Utility Key Program Metrics

Utility	Energy Efficiency Kit Measures	Target Audience	Enrollment Process	In-School Presentations
1	LEDs (3x), high-efficiency showerhead, kitchen aerator, bathroom aerator, digital thermometer	5th grade	Teachers	No
2	LEDs, high-efficiency showerhead, kitchen aerator, bathroom aerator	1st – 8th grade	Teachers	Yes
3	LEDs (4x), smart power strip, high-efficiency showerhead, kitchen aerator, bathroom aerator, hot water temperature card, thread seal tape	5th – 8th grade	Teachers	Yes
4	LEDs, high-efficiency showerhead, kitchen aerator, bathroom aerator, water flow meter bag, outlet insulators, Teflon table, hot water gauge card, energy savers booklet, product sheet	1st – 8th grade	Teachers/households	Yes
5	High-efficiency showerhead, air temperature check cards, kitchen aerator, bathroom, aerator, educational material	5th – 8th grade	Teachers	No

[13] At least one of the participating peer utilities uses AM Conservation (similar to Xcel Energy) as their third-party implementer.

Utility	Energy Efficiency Kit Measures	Target Audience	Enrollment Process	In-School Presentations
6	LEDs (3x), high-efficiency showerhead, kitchen aerator, bathroom aerator, digital thermometer, furnace filter whistle, flow test bag	5th grade	Teachers	No

Key Performance Indicators (KPIs)

In addition to understanding the structures of other peer utility school education programs, the evaluation team also sought to identify KPIs from the participating peer utilities to better evaluate the effectiveness of Xcel Energy's School Education Kits program. The KPIs for the program comparison included participation, gas and electric savings targets, actual program savings, kit measure installation rates, and NTG methods. While the evaluation team collected all available information across the peer utilities, comparing across utilities proved challenging at times given the variety of program designs and tracking data available. Additionally, because a large portion of the peer utility programs were operated by third parties, the program managers did not always have the available program information available or were unwilling to share the information. Table 2 below outlines the available KPIs across the participating peer utilities.

Table 2. Peer Utility Key Performance Indicators[14]

Utility	Participants (Kits)	Participants (Schools)	Installation Rates	2017 Gas/Electric Savings Targets	2017 Gas/Electric Savings	NTG Method
1	100,000	-	Household survey	21,700 dth; 9,000,000 kWh	21,700 dth; 9,000,000 kWh	Deemed; 0.9
2			Household survey			Calculated
3	7,500	229 schools	Household survey	5,070 dth; 814,543 kWh	5,070 dth; 814,543 kWh	Deemed; 1.0
4	67,000	1,300 schools	Optional response card			Calculated
5	-	-	-	4,992 dth; 1,084,487 kWh	5,183 dth	

Program Successes, Challenges, and Ongoing Changes

The evaluation team also assessed what the successes, challenges, and planned changes were for the peer utilities. In general, interviewed peer utilities noted that the school education programs have

[14] The sixth utility reviewed by the evaluation team did not provide any relevant KPI data and did not provide the information in an annual report

been functioning well and have exceeded initial savings and participation targets. Some of the notable success that peer utilities noted are included below:

- Third-party implementer staff typically handle a majority of the day-to-day operations and have experience working with a variety of similar utility programs. Three of the interviewed utilities said that the most effective form of program outreach and marketing has been direct outreach from the third-party implementer.
- All four of the interviewed utilities said that the school education programs help with community outreach and promoting energy efficiency among households in their service territories. They acknowledged that these types of programs help drive awareness for their other utility programs and generally are very cost effective within their residential program package.
- Three of the utilities said they have seen consistent participation growth over the last few years as a large percentage of teachers continue to participate every year and recruit new teachers when possible.
- One utility has worked with their third-party implementer to customize the educational material based on grade level. This has helped them expand their target audience and potentially distribute the energy efficiency kits to a larger percentage of households in their service territory.

Overall, there were not many specific challenges noted by the peer utility participants. The few challenges that were mentioned included:

- Extensive waitlists for the in-school presentations provided by one of the larger utilities.
- Not having any feedback from schools that have decided not to participate in the program. One utility noted that they estimate around 20% of schools choose to not participate and do not share feedback with the utility, and the utility does not know the reasoning.
- Finding solutions to further encourage households to install the kit measures and submit the program documentation so utilities can account for their household savings.

Going forward, the peer utilities said that for the most part, they will continue to implement their school education programs as they have done in the past. All of the interviewed peer utilities said they are always open to new kit measures as the residential market continues to evolve. Some of the specific upcoming changes and considerations the peer utilities added are included below.

- Two of the peer utilities noted they continue to experiment with household and school incentives to help drive participation and kit installation rates. One utility offers a chance to win a $1,000 household gift card and cash rewards ranging from $250 to $2,500 for participants that install the kit measures and submit the return card that provides details on their installation. Another utility has utilized a $250 incentive to the school with the highest percentage of installations and is currently piloting a $5 Amazon gift card incentive for any household that installs the kit measures and completes the documentation on the program website.
- Two of the peer utilities said they are currently looking into smart power strips as a possible solution to include in a future school kit, along with one utility that said they may consider smart thermostats as an add-on measure at some point.

- Two of the peer utilities said they are continually trying to improve their online and digital platforms to increase engagement among households and identify interactive ways for students and their parents to learn more about the program and ways to save energy at home.

School Education Kits Evaluation

2018 Program Evaluation: Recommendations and Responses

The Xcel Energy School Education Kits product in Colorado offers a turnkey product that combines a set of classroom activities with projects in the home to install energy efficiency and water conservation measures. The product is targeted for fifth or sixth grade students in the Company's electric and natural gas service territory. The Company works with a third-party implementer to implement this product. The third-party implementer will recruit and train teachers, provide associated educational materials, and track participation by the students and teachers.

Xcel Energy (The Company) engaged a team of researchers led by EMI Consulting to conduct a process and impact evaluation of the School Education Kits product. The evaluation team was asked to assess the following:

- Customer satisfaction (including teachers, parents, and students) with the product and motivations to participate in the product
- Opportunities to improve the product and the kits
- The impact of free ridership and spillover on product savings

Based on the results of this research, the evaluation team developed key findings and recommendations for Xcel Energy.

Recommendation	Response
1) The evaluation team recommends that Xcel Energy maintain the NTGR of 1.0 for the School Education Kits product for the 2018 product year.	The Company will maintain the 1.0 NTGR.
2) The evaluation team recommends that the product use adjusted installation rates that take into account that only a percentage of households that said they "will install" energy efficient showerheads and faucet aerators in the Home Energy Worksheet actually end up installing the measures. Specifically, this recommended adjustment includes using only 50% of the "will install" household responses in the installation rate estimate.	The Company agrees to use adjusted installation rates for water measures as recommended by the evaluation team.
3) The evaluation team recommends that Xcel Energy and its supplementary product staff proactively target low-income schools that have a higher percentage of students on free lunch programs.	The Company will work with implementation staff to explore ways to proactively target schools with higher percentages of students on free lunch programs.
4) The evaluation team	The Company will work with implementation staff to

recommends that Xcel Energy coordinate with implementation staff to update a portion of product marketing material to focus on low-income schools directly.	explore ways to update a portion of marketing materials to focus on schools with higher percentages of students on free lunch programs.
5) The evaluation team recommends that the Xcel Energy product staff explore the feasibility of additional kit measures such as outdoor solar lighting, smart energy strips, and programmable thermostats.	The Company and implementation staff will explore the feasibility of additional kit measures in 2019 and 2020.
6) The evaluation team recommends that Xcel Energy consider the opportunity for product staff or implementation staff to do at least some in-school demonstrations or trainings to help increase awareness and further promote the School Education Kits product.	The Company and implementation staff will explore the feasibility of in-school demonstrations and trainings in 2019 and 2020.
7) The evaluation team recommends that Xcel Energy evaluate the potential to provide additional online resources to the product website include supplementary educational videos, an "other ways to save" resource list, and potentially interactive games.	The implementation staff launched new online resources in 2018 including supplementary educational videos, interactive games, and links to the Company's "other ways to save" online resources. The Company will work with the implementation staff to evaluate these new resources and enhance them as necessary.
8) The evaluation team recommends that the Take Action Kit include an informational pamphlet for households to learn about additional opportunities to save energy and invest in energy efficiency through other Xcel Energy program offerings.	The Company included a postcard in 2018 Colorado kits with information on other program offerings. The Company plans to include postcards again in 2019 and will expand this effort to other states.