



Independent EM&V Audit of the KCP&L-MO PY2018 Program Evaluations

Final Report

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MichaelsEnergy

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I Executive Summary

In April 2016, the Missouri Public Service Commission (the PSC) approved Missouri Energy Efficiency Investment Act (MEEIA) Cycle 2 DSM programs for the Great Plains Energy Services Incorporated (GPES) affiliate, Kansas City Power and Light (KCP&L) – KCP&L Missouri Operations Company (KCP&L-MO) (Case No. EO-2015-0240). Of the sixteen Cycle 2 programs approved in the MEEIA, KCP&L implemented fifteen no later than the second quarter of 2016. All fifteen programs will terminate no later than March 31, 2019. The fifteen MEEIA Cycle 2 Programs are:

- **Business EER – Standard** – Offered to KCP&L legacy Missouri C&I customers, this program is designed to offer a diverse set of measures that have standardized measure savings and an incentive process that helps to improve accessibility to the customer. Eligible measures include HVAC units, lighting and controls, refrigeration, water heating, compressed air, and pool pumps.
- **Business EER - Custom** - Offered to all KCP&L C&I customers, the program provides incentives for a broad range of projects that do not fit within the Business EER – Standard program. The program delivers rebates to projects that achieve a SCT score of 1.0 or higher.
- **Business EER - Block Bidding** - Offers incentives to large C&I customers and trade allies to complete large projects that would be capped at \$100,000 for Business EER - Custom and \$400,000 for Business EER - Standard. Customers can reserve financial incentives ranging from \$50,000 to \$1 million for planned EE projects.
- **Strategic Energy Management** – Provides incentives for C&I customers to implement a continuous energy management improvement process that results in energy savings and reductions in energy intensity for industrial and large commercial clients. The SEM program was a 3-year effort ending in July of Program Year (PY) 2018. There were no new participants added nor any workshops or training provided in PY2018 and support for Cycle 2 participants stopped in July of 2018.
- **Small Business Lighting** – Available to small business customers, with an average monthly demand below 100 kW, the program provides energy assessments that includes information on potential energy savings and anticipated payback and offers higher incentives on specific lighting measures than the Standard program to help small business customers overcome financial barriers to adoption. It stopped accepting applications at the end of PY2017 due to successfully exhausting available funding.
- **Business Programmable Thermostat** – Incentivizes commercial customers to use a Nest thermostat, and allow KCP&L to remotely operate their HVAC system during peak demand periods by sending a signal to participating thermostats.
- **Demand Response Incentive** - Provides rebates to C&I customers for curtailing their energy usage during system peak demand periods. When KCP&L calls an

event, participants reduce their load toward a pre-defined firm power level to create the demand savings.

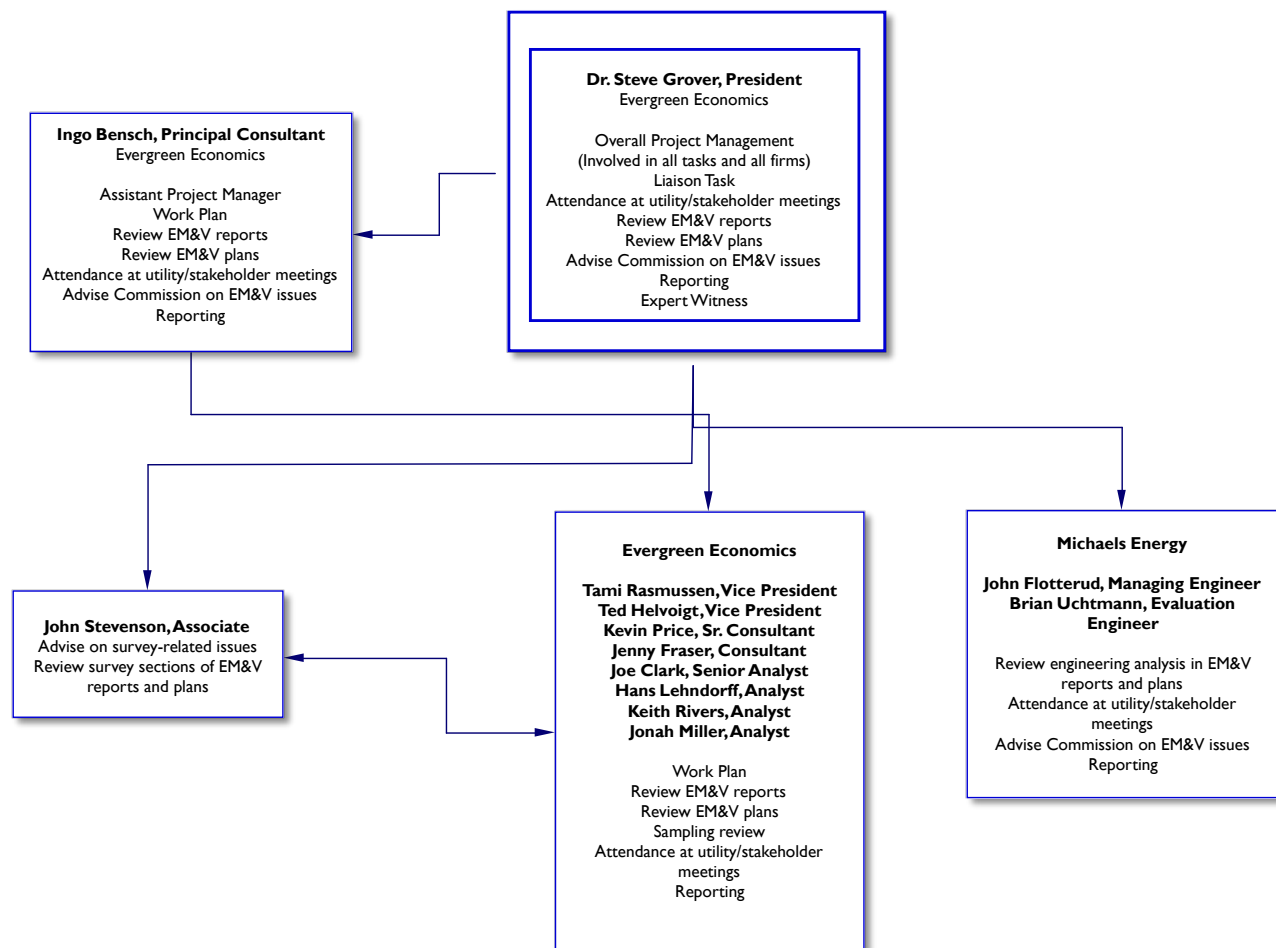
- **Whole House Efficiency** - Promotes home energy audits and comprehensive retrofits to encourage whole house improvements to existing homes. Customers are eligible for this program if they own or rent a residence and can receive assistance based on three tiers: Tier 1: Home Energy Assessment and Energy Savings Kit (ESK), Tier 2 - Weatherization Measures, and Tier 3 - HVAC Equipment.
- **Home Lighting Rebate** - Offers upstream incentives to partnering manufacturers and retailers in the KCP&L-MO and GMO service territories to discount the shelf-price of ENERGY STAR qualified LED bulbs.
- **Home Energy Report (HER) Program** - Distributes single-page print reports by mail to educate residential customers about their home energy usage and provide them with information designed to encourage behavior change in energy use.
- **Income-Eligible Home Energy Report (HER) Program** - Identical to the HER program except report messaging focuses on low- or no-cost ways to save energy.
- **Residential Programmable Thermostat** - Incentivizes residential customers to use a Nest thermostat, and allow KCP&L to remotely operate their HVAC system during peak demand periods by sending a signal to participating thermostats.
- **Income-Eligible Multifamily** - Offers efficiency kits installed directly in residences, and installation of efficient lights into multifamily common areas to delivers long-term energy savings and bill reduction to residents in income-eligible multifamily housing.
- **Home Online and Business Online Energy Audit** - Provide access for small business and residential customers to an online tool to track and analyze their energy use and receive educational materials on energy savings for heating, cooling, lighting, and other electrical equipment. This program claims no savings.

To ensure that programs comply with Missouri's rules regarding electric utility resource planning, the PSC has rules requiring annual impact evaluations and process evaluations. Minimum requirements that evaluations must meet are stipulated in 4 CSR 240-22.070(8).

KCP&L-MO contracted with an evaluation team led by Navigant Consulting, Inc. (Navigant) that included Illume Advising LLC (Illume), and NMR GROUP, INC. (NMR). The evaluation team conducted comprehensive impact and process evaluations of KCP&L-MO's energy efficiency portfolio in PY2018. For the purposes of this report the evaluation team will be referred to as "the Navigant team".

In 2019, the Missouri PSC contracted with Evergreen Economics to serve in the capacity of EM&V Auditor. Figure 1 shows the audit team members and organization, the individual team members by firm, and the associated audit responsibilities.

Figure 1: Evergreen Audit Team Organization



The audit team is required to review program evaluation activities and provide comments on compliance with 4 CSR 240-22.070(8) and the overall quality, scope and accuracy of the program evaluation reports, as well as recommendations to improve the evaluation and reporting process. Key findings of the Evergreen team’s review are summarized below.

1.1 Summary of Audit Conclusions and Recommendations

Over the past several years, the audit team has raised a variety of issues regarding the Navigant evaluations, and we have held several working meetings with the Navigant team to work through these differences. As a result of these discussions, the major issues the audit team has raised with the prior year evaluations have largely been resolved. We appreciate the willingness of the Navigant team to work through these issues and make adjustments where needed. The audit team has no recommendations for savings adjustments for the PY2018 programs.

Several issues were raised during the reviews of the PY2018 evaluation reports, and Navigant indicated that they would consider addressing them in the PY2019 evaluations. These issues are summarized below for future reference.

HER uplift analysis for LED purchases. Currently the uplift analysis that is designed to address energy efficient program cross participation does not take into account LED's purchased through the upstream lighting program, as there are no tracking data for these purchases. It is possible that some of the energy savings estimated for the HER program are coming from LED purchases that are already being counted as part of the Home Lighting Rebate program. If this is true, then some of the HER impacts are being double counted. To address this, the audit team recommends that a survey of HER treatment and control group customers be implemented to determine if there is a statistically significant difference in the rate of LED purchases occurring between these two groups. This survey will be inexpensive to implement and we recommend that it be done as part of the PY2019 evaluation.

Programmable thermostat free ridership. For PY2018 the programmable thermostat net-to-gross ratio is set at 1.0 (i.e., no free ridership or spillover) for both kWh and kW. Since this is an opt-in program, assuming zero free ridership for demand impacts is reasonable. The smart thermostats are provided at no cost through the program, however, and therefore it is possible that there is some free ridership associated with the annual kWh impacts since some customers may have otherwise purchased the smart thermostats on their own. The issue has been raised that the evaluation should develop a separate net-to-gross ratio for energy savings to account for this. Navigant has agreed to explore this as part of the PY2019 evaluation.

Spillover estimated from trade ally interviews. For some programs, participant spillover is estimated from customer surveys while the nonparticipant spillover is estimated from the trade ally surveys. With these two different sources, there is potential that the trade ally surveys and customer surveys might be double counting spillover, as they are both referencing projects done outside the programs. Navigant acknowledges that there may be some overlap between trade allies and customers. However, the evaluation team believes that the overall magnitude for the participant spillover is low and that that any overlap with the spillover reported by trade allies is also likely to be small. Navigant indicated that they could explore this issue by adding questions to the customer surveys to determine if customers were working with a participating contractor with these spillover measures. The audit team recommends that these questions be added in future surveys.

Illinois TRM versions. The current evaluation report reference both the Illinois TRM version 5 and version 7, with no information provided on the process used to determine



which version is used in any given situation. Navigant has agreed to use only the Illinois TRM version 7 beginning in PY2019.

2 Introduction

The Missouri Energy Efficiency Investment Act (MEEIA) was passed in 2009, launching a new era for energy efficiency programs in Missouri. The Missouri Public Service Commission (the PSC) adopted four administrative rules (4 CSR 240-3.163, 4 CSR 240-3.164, 4 CSR 240-20.093 and 4 CSR 240-20.094) referred to as “MEEIA rules”) to implement MEEIA.¹ MEEIA directs the PSC to permit electric corporations to implement Commission-approved demand side management (DSM) programs, with a goal of achieving cost-effective demand-side savings.

In 2009, the State of Missouri and KCP&L-MO reached an agreement that launched KCP&L-MO’s suite of residential and commercial energy efficiency programs, which began in 2013 as MEEIA Cycle 1. The MEEIA Cycle 1 programs ended on December 31, 2015, for KCP&L-MO (Case No. EO-2012-0142). In early 2016, the PSC approved MEEIA Cycle 2 DSM programs for KCP&L-MO (Case No. EO-2015-0055). All Cycle 2 programs were implemented no later than the second quarter of 2016, and all will terminate no later than March 31, 2019. The MEEIA Cycle 2 programs are:

- **Business EER - Standard** - Offered to KCP&L legacy Missouri C&I customers, this program is designed to offer a diverse set of measures that have standardized measure savings and an incentive process that helps to improve accessibility to the customer. Eligible measures include HVAC units, lighting and controls, refrigeration, water heating, compressed air, and pool pumps.
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¹ The PSC is currently in the process of revising the MEEIA rules.

- **Small Business Lighting** - Available to small business customers, with an average monthly demand below 100 kW, the program provides energy assessments that includes information on potential energy savings and anticipated payback and offers higher incentives on specific lighting measures than the Standard program to help small business customers overcome financial barriers to adoption. It stopped accepting applications at the end of PY2017 due to successfully exhausting available funding.
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- **Home Online and Business Online Energy Audit** - Provide access for small business and residential customers to an online tool to track and analyze their energy use and receive educational materials on energy savings for heating, cooling, lighting, and other electrical equipment. This program claims no savings.

To ensure that programs comply with Missouri's rules regarding electric utility resource planning, the PSC has long-term resource planning rules that contain requirements for

impact evaluations and process evaluations. The goal of the impact and process evaluations is “to develop the information necessary to evaluate the cost-effectiveness and improve the design of existing and future demand-side programs and demand-side rates, to improve the forecasts of customer energy consumption and responsiveness to demand-side programs and demand-side rates and to gather data on the implementation costs and load impacts of demand-side programs and demand-side rates for use in future cost-effectiveness screening and integrated resource analysis.”²

Key requirements of the evaluations as outlined in 4 CSR 240-22.070(8) include the following:

- Utilities are expected to complete annual full process and impact evaluations for each DSM program.
- **At a minimum, impact evaluations should:**
 1. “develop methods of estimating the actual load impacts of each demand-side program” using one or both of the following methods:
 - a. “Comparisons of pre-adoption and post-adoption loads of program participants, corrected for the effects of weather and other intertemporal differences”; and
 - b. “Comparisons between program participants’ loads and those of an appropriate control group over the same time period”.
 2. “develop load-impact measurement protocols that are designed to make the most cost-effective use of the following types of measurements, either individually or in combination: monthly billing data, load research data, end-use load metered data, building and equipment simulation models, and survey responses or audit data on appliance and equipment type, size and efficiency levels, household or business characteristics, or energy-related building characteristics”.
 3. Develop protocols to collect data regarding demand-side program market potential, participation rates, utility costs, participant costs and total costs.
- **At a minimum, process evaluations should** address the following five questions:
 1. What are the primary market imperfections that are common to the target market segment?
 2. Is the target market segment appropriately defined or should it be further subdivided or merged with other segments?

² 4 CSR 240-22.070(8) Evaluation of Demand-Side Programs and Demand-Side Rates

3. Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target segment?
4. Are the communication channels and delivery mechanisms appropriate for the target segment?
5. What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each end-use measure included in the program?

KCP&L-MO contracted with Navigant Consulting, Inc. (Navigant) as the Evaluation, Measurement & Verification (EM&V) contractor, to conduct comprehensive impact and process evaluations of KCP&L-MO's energy efficiency portfolio. Navigant conducted evaluations of both the commercial and residential energy efficiency programs.

In 2019, the PSC contracted with Evergreen Economics and Michaels Energy (the Evergreen team) to serve in the capacity of EM&V Auditor to review program evaluation activities and provide comments on compliance with 4 CSR 240-22.070(8) and the overall quality, scope and accuracy of the program evaluation reports. The following report presents Evergreen Economics' review of the KCP&L-MO program evaluations for program year 2018 (PY2018).

To conduct this review, the Evergreen team conducted the following activities:

- Thoroughly read each program's evaluation report in its entirety, summarizing key information on evaluation methodology, findings and recommendations for each program.
- Conducted a thorough review of all evaluation survey instruments and responses where available to confirm the methodologies used were reasonable and consistent with best practices and that reported findings aligned with the data collected.
- Reviewed, where available, specific evaluation tools and methodologies used for calculating program savings, including custom project savings calculations, and survey methods for developing net program impacts.

This report is organized into the following sections to help guide the reader through this summary of the key results:

- Section 3: Impact Evaluation Summary
- Section 4: Summary of Key Findings and Recommendations from the Process Evaluations

- Section 5: Review of Cost-Effectiveness Findings
- Section 6: Evergreen Team's Findings and Recommendations

3 Impact Evaluation Summary

This section summarizes the results and key findings and recommendations from the impact evaluations of KCP&L-MO's residential and business energy efficiency program portfolio. Note that the following programs do not have associated energy savings in 2018, and are omitted from exhibits in this section:

- Home Online Energy Audit
- Business Online Energy Audit

3.1 Summary of Impact Evaluation Methods

Navigant followed the Missouri Code of State Regulations 4 CSR-240-22-070 (8), completing impact evaluations for each KCP&L-MO program that reported energy savings in 2018. Missouri regulations state that programs should be evaluated using one or both of the methods and one or both of the protocols detailed below.

1) Impact Evaluation Methods

“At a minimum, comparisons of one or both of the following types shall be used to measure program and rate impacts in a manner that is based on sound statistical principles:

- a) Comparisons of pre-adoption and post-adoption loads of program or demand-side rate participants, corrected for the effects of weather and other intertemporal differences.
- b) Comparisons between program and demand-side rate participants' loads and those of an appropriate control group over the same time period.”

2) Load Impact Measurement Protocols

“The evaluator shall develop load impact measurement protocols designed to make the most cost-effective use of the following types of measurements, either individually or in combination:

- a) Monthly billing data, hourly load data, load research data, end-use load metered data, building and equipment simulation models, and survey responses.
- b) Audit and survey data on appliance and equipment type, size and efficiency levels, household or business characteristics, or energy-related building characteristics.”

Table 1 below summarizes Navigant's methods and protocols, for each. The labels in columns two and three align with the Missouri requirements discussed above.

Table 1: Impact Evaluation Methods and Protocols

Program	Impact Method	Impact Protocol	Description
Commercial and Industrial Programs			
Business EER - Standard	1a	2a and 2b	<ul style="list-style-type: none"> • Deemed measure savings review • Tracking database review • Onsite verification
Business EER - Custom	1a	2b	<ul style="list-style-type: none"> • Tracking database review • Engineering desk review • Telephone verifications
Small Business Lighting	1a	2a and 2b	<ul style="list-style-type: none"> • Deemed measure savings review • Tracking database review • Onsite verification and lighting logger study
Business Programmable Thermostat	1b	2b	<ul style="list-style-type: none"> • Deemed measure savings review • Tracking database review
Demand Response Incentive	1a	2a	<ul style="list-style-type: none"> • Tracking database review • Econometric and customer baseline analysis
Block Bidding	1a	2b	<ul style="list-style-type: none"> • Tracking database review • Engineering desk reviews
Strategic Energy Management	1a	2b	<ul style="list-style-type: none"> • Tracking database review • Engineering desk review
Residential Programs			
Whole House Efficiency	1a	2b	<ul style="list-style-type: none"> • Deemed measure savings review • Tracking database review
Home Lighting Rebate	1a*	2b	<ul style="list-style-type: none"> • Engineering desk review • Tracking database review • In-store intercept surveys
Income-Eligible Home Energy Report	1b	2a	<ul style="list-style-type: none"> • Billing Analysis
Home Energy Report	1b	2a	<ul style="list-style-type: none"> • Billing Analysis
Residential Programmable Thermostat	1b	2b	<ul style="list-style-type: none"> • Deemed measure savings review • Tracking database review
Income-Eligible Multifamily	1a	2b	<ul style="list-style-type: none"> • Deemed measure savings review • Tracking database review

*The upstream nature of the HLR program does not allow for identification of participants and nonparticipants for assessments for comparisons of load shapes; for budgetary reasons the evaluation did not include an hours of use study, which could have provided lighting load shapes for all households.

3.1.1 Net-to-Gross Calculation Methods

Navigant developed net-to-gross (NTG) ratios for selected KCP&L programs to estimate net program savings. Net savings are the portion of total estimated savings that are directly attributable to a specific energy efficiency program. Net savings estimates typically account for one or more of the following:

- **Free Ridership (FR)** - program savings attributable to program participants who would have implemented a program measure or practice in the absence of the program.
- **Participant Spillover (PSO)** - additional energy savings achieved when a program participant installs energy efficiency measures or practices as a result of the program's influence outside the efficiency program.
- **Nonparticipant Spillover (NPSO)** - additional energy savings achieved when a nonparticipant implements energy efficiency measures or practices because of the program's influence (e.g., through exposure to the program).

The net-to-gross ratio for each program adjusts gross program savings to account for the presence of free ridership, participant spillover, and non-participant spillover. The general formula for calculating the net-to-gross ratio is:

$$\text{NTG Ratio} = 1 - \text{FR rate} + \text{PSO rate} + \text{NPSO rate}$$

Navigant conducted research to develop net-to-gross ratios for six programs, the Business EER Standard, Business EER Custom, Block Bidding, Small Business Lighting, Whole House Efficiency, and Home Lighting Rebate programs.

Navigant estimated free ridership, participant spillover, and non-participant spillover for the Small Business Lighting program using a self-report survey method. The approach used surveys designed to assess the likelihood that participants would have installed some or all of the energy efficiency measures incentivized by the program even if the program had not existed. The participant surveys were based on a framework developed by Energy Trust of Oregon.

Table 2 summarizes the method used for each program.

Table 2: Net Savings Methods

Program	Estimated in 2018	Savings are Inherently Net	Deemed Value (1.00)	Prior Year Value
Commercial Programs				
Business EER - Standard				X
Business EER - Custom	X			
Block Bidding				X
Strategic Energy Management			X	
Small Business Lighting				X
Business Programmable Thermostat		X		
Demand Response Incentive		X		
Residential Programs				
Whole House Efficiency				X
Home Lighting Rebate	X			
Income-Eligible Home Energy Report		X		
Home Energy Report		X		
Residential Programmable Thermostat		X		
Income-Eligible Multifamily			X	

3.2 Summary of Impact Evaluation Findings

In this section, we provide a summary of the energy savings goals and accomplishments across KCP&L-MO's energy efficiency program portfolio. Table 3 and Table 4 show KCP&L-MO's energy efficiency targets, *ex ante* gross values, *ex post* gross values, the evaluated *ex post* net savings (evaluated) and net achievement compared to the targets for energy savings (kWh) and demand reductions (kW), respectively. To ensure clarity, these terms are defined as follows:

- **Ex Ante Gross Savings:** Annualized savings reported by KCP&L-MO, or calculated using tracked program activity to TRM savings values.
- **Ex Post Gross Savings:** Annualized savings calculated and provided by the evaluation team.
- **Net Savings Ex Post:** *Ex post* savings multiplied by the net-to-gross ratio, accounting for free ridership, spillover effect and market effects.
- **PSC-Approved Targets:** Annualized savings targets for the residential and commercial and industrial (C&I) sectors.

Table 3: KCP&L-MO Portfolio Energy Savings in PY2018, kWh

Program	Ex Ante Gross Savings	Ex Post Gross Savings	Gross Realization Rate	NTG Ratio	Net Savings Ex Post	PSC – Approved 3-Year Targets	% of Target Reached
Business EER - Standard	25,328,049	28,793,182	114%	96%	27,641,455	58,370,690	47%
Business EER - Custom	23,184,400	23,415,657	101%	74%	17,327,586	44,361,460	39%
Block Bidding	740,191	439,038	59%	74%	324,888	10,059,398	3%
Strategic Energy Management	-123,710	-981,573	N/A	100%	-981,573	9,027,253	-11%
Small Business Lighting	4,993	4,523	91%	87%	3,944	3,509,634	0%
Business Programmable Thermostat	3,696	3,076	83%	100%	3,076	98,406	3%
Demand Response Incentive*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Commercial Portfolio	49,137,619	51,673,904	105%	86%	44,319,377	125,426,841	35%
Whole House Efficiency	6,553,954	4,387,961	67%	82%	3,598,128	17,468,256	21%
Home Lighting Rebate	4,911,230	7,028,879	143%	70%	4,894,594	24,692,870	20%
Income-Eligible Home Energy Report	1,406,789	1,216,306	86%	100%	1,216,306	1,682,756	72%
Residential Programmable Thermostat	-119,658	-28,385	NA	100%	-28,385	4,388,076	1%
Home Energy Report	17,575,561	14,238,751	81%	100%	14,238,751	13,861,941	103%
Total Residential Portfolio	30,327,876	26,843,512	89%	89%	23,919,394	62,093,899	39%
Income-Eligible Multifamily	4,752,441	5,267,345	111%	100%	5,267,345	10,577,132	50%
Total Multifamily Portfolio	4,752,441	5,267,345	111%	100%	5,267,345	10,577,132	50%
Total**	84,217,935	83,784,761	99%	88%	73,506,116	198,097,872	37%

*The Demand Response Incentive program does not report energy savings, only demand savings

**Totals may not sum due to rounding

Overall, in PY2018, year two of the three-year cycle, the portfolio saw gross evaluated savings of an estimated 83,784,761 kWh, a gross realization rate of 99%. Total portfolio net savings were estimated at 73,506,116 kWh. The portfolio achieved approximately 37% the three-year MEEIA Cycle 2 energy target, which is a cumulative 3-year target, indicating the programs in aggregate, are progressing toward meeting the MEEIA Cycle 2 targets.

The residential portfolio achieved 39 percent of the three-year target net savings goal in 2018 with a 23,919,394 kWh. The Home Energy Report program contributed the highest savings and had the highest savings relative to its target, with 103 percent of its three-year goal achieved in 2018. The Home Lighting Rebate was the next highest contributor to the overall residential savings with 4,894,594 kWh, which is 20 percent of the 3-year target.

The C&I portfolio reported both higher savings and achieved more of its 3 year goal than the residential portfolio in 2018. The C&I portfolio saw 44,319,377 net savings in 2018, or 35 percent of its three-year goals. The Business EER – Standard program saw the largest savings in terms of total savings, achieving net savings of 27,641,455 kWh or 47 percent of the three-year goal. The Block Bidding program saw savings for the second time since its beginning in 2017, achieving net savings of 324,888 kWh or three percent of the 3-year target. The Strategic Energy Management program ceased support for the program in July 2018, after the program achieved 227% of its MEEIA target goal in 2017. Navigant notes that as support for the program ceased, negative energy impacts were to be expected post-program as customers' energy use will increase when compared to energy use during the program when customers were supported and received training on energy saving opportunities they could implement. Navigant also notes that in the context of this program "negative incremental savings" represent the overall savings for these customers are still apparent and positive, but they are less than anticipated if the continued customer engagement and support had materialized. The program reported in 2018 reported -981,573 kWh of net savings or -11% of the three-year goal.

Table 4 displays the KCP&L results for demand savings. In PY2018, year three of the three-year cycle, the portfolio saw gross evaluated demand savings of an estimated 32,306 kW, a gross realization rate of 93%. Total portfolio net demand savings were estimated at 45,986 kW. The portfolio achieved approximately 69% the three-year MEEIA Cycle 2 demand savings target, which is a cumulative 3-year target, indicating the programs are in aggregate progressing toward meeting the targets.

Table 4: KCP&L-MO Portfolio Demand Savings in PY2018, KW

Program	Ex Ante Gross Savings	Ex Post Gross Savings	Gross Realization Rate	NTG Ratio	Net Savings Ex Post	PSC – Approved Targets	% of Target Reached
Business EER - Standard	5,156	5,645	109%	96%	5,419	10,934	50%
Business EER - Custom	4,693	4,723	101%	74%	3,495	12,128	29%
Block Bidding	292	113	39%	74%	84	1,744	5%
Strategic Energy Management	0	382	N/A	N/A	382	2,021	19%
Small Business Lighting	1	1	93%	87%	1	562	0%
Business Programmable Thermostat	10.08	21	208%	100%	21	268	8%
Demand Response Incentive	16,500	13,464	100%	N/A	13,464	15,000	1
Total Commercial Portfolio	26,653	24,349	91%	94%	22,865	42,657	54%
Whole House Efficiency	3,185	2,313	73%	82%	1,897	4,322	44%
Home Lighting Rebate	490	1,019	208%	69%	706	2,498	28%
Income-Eligible Home Energy Report	364	336	92%	100%	336	474	71%
Home Energy Report	3,885	3,237	83%	100%	3,237	2,866	113%
Residential Programmable Thermostat	-323	405	N/A	100%	405	11,967	3%
Total Residential Portfolio	7,602	7,309	96%	307%	22,473	22,137	102%
Income-Eligible Multifamily	553	648	117%	100%	648	1,543	42%
Total Multifamily Portfolio	553	648	117%	100%	648	1,543	42%
Total*	34,808	32,306	93%	142%	45,986	66,327	69%

*Totals may not sum due to rounding

Table 5 shows estimated free ridership, spillover, and non-participant spillover rates along with the final net-to-gross ratios across the KCP&L-MO 2018 program portfolio.

Table 5: KCP&L-MO Portfolio Estimated Free Ridership, Spillover and NTG Ratio

Program	Free Ridership	Participant Spillover	Non-participant Spillover	NTG Ratio
Business EER - Standard	0.05	0.002	0.004	0.96
Business EER - Custom	0.31	0.002	0.05	0.74
Block Bidding - Standard	N/A	N/A	N/A	0.74
Block Bidding - Custom	N/A	N/A	N/A	0.96
Strategic Energy Management	N/A	N/A	N/A	1
Small Business Lighting	0.14	0.002	0.01	0.87
Business Programmable Thermostat	N/A	N/A	N/A	1
Demand Response Incentive	N/A	N/A	N/A	1
Whole House Efficiency	0.33	0.02	0.14	0.82
Home Lighting Rebate	0.46	0.16	0	0.7
Income-Eligible Home Energy Report	N/A	N/A	N/A	1
Home Energy Report	N/A	N/A	N/A	1
Residential Programmable Thermostat	N/A	N/A	N/A	1
Income-Eligible Multifamily	N/A	N/A	N/A	1

3.3 Summary of Key Impact Evaluation Recommendations

3.3.1 PY2018 Recommendations

Navigant provided recommendations from the PY2018 program evaluations that seek to guide and improve future impact evaluations. The table below summarizes the evaluator recommendations by program.

Program	EM&V PY2018 Recommendation
Business Energy Efficiency Program – Standard	<p>IC should perform additional quality checks of the efficient wattage versus the baseline wattage to ensure that the efficient lamp has a lower wattage than the baseline wattage.</p>
	<p>Observed that the “Quantity Removed” field was always “Null”, however some of the LED fixtures or lamps installed to replace linear lamps replace more than one linear lamp and have higher wattages to account for this. For instances when more than one lamp or fixture is replaced, the “Quantity Removed” field be updated to reflect the quantity replaced.</p>
	<p>Provide further guidelines, such as a lumen equivalency range, around what qualifies for the LED High/Low Bay measures.</p>
	<p>Add an additional field for the size of the unit installed for non-lighting measures.</p>
	<p>Use 4,700 hours for hours of use (HOU) and 0.7 for coincidence factor (CF) based on weighting the verified building specific values determined from the lighting logger study.</p>
Business Energy Efficiency Rebate - Custom Program	<p>The implementation contractor should align the peak demand calculations with the KCP&L peak period, particularly for non-lighting projects. If zero peak demand savings are claimed, indicate reasons why.</p>
	<p>For Custom lighting operating hours, the implementation contractor should collect detailed operating schedules (8:00 a.m.-7:00 p.m. on weekdays, etc.) to help determine the CFs and creation of lighting operating hours.</p>
Home Lighting Rebate Program	<p>For projects where lighting fixtures operate 24/7 annually, the implementation contractor should use 1.0 as the coincidence factor. If occupancy sensors or special lighting controls are installed as part of the lighting upgrade, claim additional savings for the installation of lighting controls.</p>
	<p>Navigant concurs with GMO’s decision to focus on specialty LEDs for most of PY2018 in an effort to assist meeting overall portfolio needs, but the team also supports the reintroduction of standard LED incentives in Q3 PY2018 and continued support in PY2019, given the observed backsliding to halogens in PY2018.</p>
	<p>The target market is appropriately defined as residential customers and currently has no recommendations for improvement.</p>
<p>GMO and the IC should continue exploring the possibility of adding fixtures, downlight kits, and emerging lighting technologies to the program in MEEIA Cycle 3. They should also consider the most appropriate ways to market the program in MEEIA Cycle 3 once the Evergy rebranding is complete.</p>	
<p>Navigant supports GMO’s decision to reintroduce standard LEDs in Q3 of PY2018 and retain support in PY2019. Navigant also encourages GMO and the IC to continue to explore the strengths and weaknesses of including fixtures, downlight kits, and emerging lighting products in the MEEIA Cycle 3 programs.</p>	

	<p>Current promotional efforts have contributed to the great success of the HLR program in MEEIA Cycle 2.</p>
<p>Home Energy Report</p>	<p>KCP&L should continue providing reports and encouraging customers to log into the Online Energy Audit to help customers understand how to manage their</p>
	<p>The target market segment is appropriately defined as residential single-family homes. As the program modifies the reports and adds features, KCP&L should consider assessing the effectiveness of the program with customers in multifamily homes to expand the target market.</p>
	<p>The program should continue to keep abreast of new ways to use and save energy to provide up-to-date tips, including tips for load-shifting, tips for using smart home devices, and EV charging.</p>
	<p>With upcoming changes to access to email reports and data granularity, KCP&L should consider tracking participation and additional research on effectiveness after the new program elements have been in place for a program year.</p>
<p>Residential and Business Programmable Thermostat Programs</p>	<p>With launch of the new process that will enable more customers to receive email reports, high bill alerts, and other communications, KCP&L should consider additional research on the effectiveness of and the customer experience with these touch points.</p>
	<p>As noted in the PY2017 evaluation, the program addresses market imperfections by providing customers with an ability to reduce electricity usage during hours of peak demand. Continuing to monitor the market for how the Nest solution compares to competition can help ensure the program is matching the market.</p>
	<p>KCP&L no longer targeted or actively recruited customers in PY2018 because it has met enrollment targets. Navigant agrees this was an appropriate approach after reaching the enrollment target.</p>
	<p>KCP&L should consider further educating customers on event notification options and the purpose of DR events to reduce customer confusion and increase program satisfaction. The program should continue to focus communication channels around activating DIY thermostats that have yet to be activated.</p>
	<p>As noted in PY2017, KCP&L should monitor program savings targets in addition to enrollment goals to ensure that program cost-effectiveness remains high.</p>
	<p>The mix of end-use measures included in the program (i.e., PTs) meets the needs of the existing market. KCP&L could consider expanding the program to include customers that have already purchased other brands of smart/connected thermostats. In addition, KCP&L could consider expanding the BYOD customer segment through targeted marketing in MEEIA Cycle 3. BYOD programs are comparatively inexpensive to operate and a way that many utilities run thermostat programs successfully.</p>

	<p>CLEAResult continued using propensity modeling in PY2018 to select customers to recruit. KCP&L should continue to refine propensity modeling to select customers for the program and begin to target customers with automated curtailment capabilities.</p>
	<p>The target market is appropriately defined and the evaluation team does not have any recommendations at this time.</p>
Demand Response Incentive Program	<p>KCP&L was able to include net power in PY2017 and PY2018 data, which was a recommendation in the PY2016 report. KCP&L should continue to provide net power.</p>
	<p>As AMI becomes more prevalent, KCP&L has made a concerted effort to provide more consistent updates to participants regarding their program performance. Navigant recommends continuing this effort in preparation for a “pay-for-performance” incentive structure in which immediate event feedback is required. Such capabilities would also allow for more periodic updates of participants’ event target values (FPLs), as recommended in PY2017.</p>
	<p>In PY2018, the DRI product manager made progress to better manage participants’ event behavior. The results of the PY2018 impact evaluation reveal limitations in what performance improvements are achievable through behavior management due to the fundamental program design. Navigant recommends moving to a “pay-for-performance” incentive structure to increase event participation in Cycle 3.</p>

4 Process Evaluation Summary

This section summarizes key methods and findings from the PY2018 process evaluations of KCP&L-MO's residential and business energy efficiency program portfolio. The first subsection summarizes the process evaluation methods used by the Navigant evaluation team, and includes an assessment of how the process evaluation aligns with the minimum requirements for demand-side process evaluations set forth by the Missouri Code of State Regulations (CSR).

4.1 PY2018 Process Evaluation Findings and Recommendations

This subsection presents overall program process evaluation findings and evaluator recommendations.

4.1.1 Process Evaluation Findings

Navigant presented the process evaluation findings for each program in terms of responses to key evaluation research questions, and responses to the five required process evaluation questions set forth in 4 CSR 240-22.070(9). Overall, the process evaluation findings are complete, thorough and respond to the mandated questions.

In the following sections we summarize key process evaluation findings across five topic areas, customer satisfaction, program participation, program marketing, program delivery and program implementation changes.

4.1.1.1 Customer and Trade Ally Satisfaction

KCP&L programs appear to be performing to customer and trade ally satisfaction. Navigant evaluated customer or trade ally satisfaction for eight programs. Across these programs, in general customer and trade ally satisfaction is high. The satisfaction results reported indicate that the programs are well-run and meeting needs of customers and trade allies. Table 6 below presents a summary of satisfaction results across the eight programs where satisfaction research was conducted.

Table 6: Customer and Trade Ally Satisfaction Findings Summary

Program	Process Evaluation Findings Summary
Business EER - Standard	Customer satisfaction is high with participant's surveyed rating the program an average score of 8.8, with 10 being the highest score and indicating extremely satisfied.
Business EER - Custom	End-user participant satisfaction is high with 84% of participants being very likely to participate in future KCP&L programs. Some trade allies are dissatisfied with the project application process and the rebate amounts.
Block Bidding	Direct satisfaction research was not conducted.
Strategic Energy Management	Direct satisfaction research was not reported; however, over 40% of the interviewed participants felt the cost of the MEEIA rider did not offset the benefits of the SEM incentive and lower energy costs.
Small Business Lighting	Only one customer out of 10 total projects for the Small Business Lighting program responded to the customer survey in PY2018, resulting in too small of a sample to draw any conclusions from. Looking at the responses for Cycle 3 overall, participants gave an average satisfaction score over 9, with 10 being extremely satisfied.
Programmable Thermostat Programs	Program satisfaction was relatively high with 75% of respondents reporting being satisfied or very satisfied.
Home Energy Report	Navigant reviewed the customer engagement tracker survey and found that 79% of treatment respondents were satisfied with KCP&L compared to 77% of control customers.
Online Energy Audit	4% of CET respondents who have used the Energy Audit reported being satisfied with it and 71% find the information useful

4.1.1.2 Program Participation

The Navigant evaluation found that across all programs, in general, program participation met expectations. The Evergreen team noted that participation information was not included for several programs. Table 7 below provides a summary of participation findings from the evaluation.

Table 7: Program Participation Findings Summary

Program	Process Evaluation Findings Summary
Business EER - Standard	Overall in PY2018 KCP&L provided rebates for 1,017 projects in the Standard program, with 483 of them in the KCP&L-MO territory.
Business EER - Custom	The program had 237 projects in PY2018.
Block Bidding	Three projects were completed in PY2018.
Strategic Energy Management	The program recruited 12 participants in PY2018.
Small Business Lighting	Ten total projects were completed in PY2018.
Programmable Thermostat Programs	The programs achieved 150% of program enrollment targets. As a result, marketing efforts were decreased and the DIY portal was closed.
Demand Response Incentive	Ten customers participated in the Demand Response Incentive program.
Whole House Efficiency	There we 17,346 projects completed across the three tiers.
Home Lighting Rebate	No specific participation information was provided. Just fewer than 200,000 incentivized bulbs were sold.
Home Energy Reports	In PY2018, of the respondents who recalled the reports, 92% stated reading the reports and 38% talk to other people about the reports.
IE Multifamily	No specific participation information was provided. However, 77,589 measures were installed through the program.
Online Energy Audit	73,574 customers completed the online WUM audit.

4.1.1.3 Program Marketing and Awareness

Across the programs, Navigant found that most programs have good customer awareness, and that KCP&L is employing appropriate marketing approaches. The Evergreen team found that reporting on marketing and program awareness in the Navigant evaluation is satisfactory, and the results are summarized in Table 8.

Table 8: Program Marketing and Awareness Findings Summary

Program	Process Evaluation Findings Summary
Business EER - Standard	KCP&L developed targeted marketing materials for certain segments to help explain benefits of implementing energy conservation. In addition, there is also targeted marketing for sectors with historically lower participation such as datacenters and property managers.
Business EER - Custom	The program relies heavily on trade allies to market to customers. The program has made an increased effort to increase engagement with existing trade allies and recruit new trade allies.
Block Bidding	The Block Bidding program's target market is KCP&L's largest customers. KCP&L offers blocks of electric savings by issuing an RFQ to eligible customers and third parties.
Strategic Energy Management	SEM team works with its key accounts team to identify high energy usage customers with approximately 10 MWh of annual consumption and then validates whether these customers have the savings potential to participate in the program by conducting onsite visits.
Small Business Lighting	In PY2018, the SBL program offered small business customers an energy assessment that included information on potential energy savings and anticipated payback.
Programmable Thermostat Programs	In PY2018, the program reached 150% of the program enrollment target. Due to reaching program enrollment goals, KCP&L closed the DIY portal, which was historically the largest customer acquisition channel.
Demand Response Incentive	The DRI program began using propensity modeling to recruit customers in PY2018. Conversations between the product manager and program participants indicated that program communication improvements resulted in messaging reaching the correct person more often in PY2018.
Whole House Efficiency	The program has been marketing to participating customers by email. The WHE program has continued to emphasize the synergies that occur when customers participate in multiple program tiers. Customers that have already participated in the program have demonstrated a high level of receptivity and a willingness to engage with KCP&L and the program implementer.
Home Lighting Rebate	The program did not update marketing materials in PY2018. Marketing and outreach were also reduced in PY2018.
Home Energy Report	The program uses two primary communication channels: paper mailed

Program	Process Evaluation Findings Summary
Income-Eligible Multifamily	Communication channels and delivery are appropriate given the direct interaction with property owners/managers and tenants.
Online Energy Audit	All communication channels and delivery mechanisms are appropriate for the target market segments.

4.1.1.4 Program Operations and Delivery

The Navigant evaluation provides adequate and appropriate information on program operations and delivery. The evaluation found that overall, the KCP&L programs are operating as designed and being delivered to the target market effectively, with few significant challenges. Table 9 provides a summary of key findings for each program.

Table 9: Program Operations and Delivery Findings Summary

Program	Process Evaluation Findings Summary
Business EER - Standard	<p>Program operations and program delivery are working well, with high program satisfaction. The Standard program is complementary other Business EER programs by providing rebates for the more typical capital projects. KCP&L is working to better align the two programs. From the customer perspective, the Standard program and the Custom program are one program not two programs. Most of the measures that are not covered by Standard are covered by another program. The program is not intended to stand-alone from the customer perspective but be considered an integrated C&I portfolio.</p>
Business EER - Custom	<p>Program operations and program delivery are working well, with high program satisfaction. The Custom program also serves new construction projects. Beginning in PY2016, LED retrofit lighting projects were moved from the Custom program to the Standard program. The Custom program still serves new construction LED lighting projects and LED lighting projects with greater than 8,000 hours of annual use.</p>
Block Bidding	<p>Large customers targeted by the Block Bidding program run in to two challenges. First, large customers have opted out of KCP&L's rebate programs because incentive caps precluded them from receiving the same value they were in the program. Second, trade allies and customers are not aware of or familiar with the Block Bidding program.</p>
Strategic Energy Management	<p>The program is designed in a manner consistent with other SEM programs. While participants are in the early stages of the program operations and program delivery are working well. The program has sought to educate C&I staff in identifying low cost/no-cost measures, improve efficiency, and reduce energy usage through behavioral changes. The program achieved these goals through a 3-year engagement of workshops and one-on-one coaching conducted by CLEAResult that began in PY2018.</p>
Small Business Lighting	<p>Navigant's findings indicate the SBL program is operating well in the territory, almost surpassing the 3-year MEEIA Cycle 2 target by the end of PY2017. Navigant's process research indicates that the program was successful in its third year, exhausting all funding in KCP&L-MO and GMO by the end of PY2018.</p>
Programmable Thermostat Programs	<p>KCP&L met its enrollment targets in PY2018. To limit program enrollment, the utility shut down the DIY portal on January 9, 2018. In addition, the</p>

Program	Process Evaluation Findings Summary
	utility set caps on the number of DI installations that could occur each month.
Demand Response Incentive	Navigant confirmed that customers met their FPL by observing whether their energy profile during the event aligned with contract limits.
Whole House Efficiency	Navigant’s process evaluation research found that participants and trade allies are generally very satisfied and program operations and delivery are working well. Cost continues to be a barrier to residential EE upgrades, especially for HVAC purchases. KCP&L and the implementer have made strides in this area by streamlining messaging to encourage customer participation in Tiers 2 and 3.
Home Lighting Rebate	Program operations and program delivery are working well, with high program satisfaction among suppliers and customers. In PY2018, the program supported specialty LEDs but only supported standard A-line general service, medium screw base LEDs for the first few months of PY2018 and only in the Discount channel.
Home Energy Report	In PY2018 the program format remained unchanged. However, more substantial changes are expected in PY2019.
Income-Eligible Multifamily	The program is attempting to address the market imperfections – namely, limited property owner/manager investment capital for efficiency improvements and high property staff turnover-by prioritizing direct outreach to building owners and property manager.
Online Energy Audit	Program operations and program delivery are working well, with high program delivery are working well. However, some customers do not understand how their actions and appliances or equipment in their home or business can affect their energy use.

4.1.1.5 Program Implementation Challenges

Table 10 provides a summary of key findings for each program that relate to program implementation challenges.

Table 10: Program Implementation Challenges Findings Summary

Program	Process Evaluation Findings Summary
Business EER - Standard	Since many of the measures focused on end uses besides lighting were moved to the Custom program, KCP&L should try to find ways to increase participation in the Custom program by leveraging participation in the Standard program. This could be done through trade ally training, combined marketing, and follow-ups with previous participants. Another option is to add bonus or bundled incentives for participating in more than one program or end-use category.
Business EER - Custom	The measures targeted by the custom program are more complex and have more uncertainty in energy savings than those in the standard program, which makes customers less likely to install them without the education and financial incentives offered by the program.
Block Bidding	Navigant found that large customers targeted by the Block Bidding program have often opted out of KCP&L’s rebate program because incentive caps precluded them from getting out the same value they are putting in to the program. In its third year, the Block Bidding program began to address some of the challenges encountered in the past years. Continuing to fine-tune the eligibility requirements, simplify program incentive design, and marketing of specific use cases will ensure greater, more successful participation.
Strategic Energy Management	Navigant noted a few challenges, including, there was not an option for existing participants to continue their involvement in the program and the pursuit of energy saving opportunities. As well as, the transition of participant’s energy sponsor or champion made it difficult to maintain the changes made, update the energy model, and continue to address the opportunities identified in the register. Lastly, the Key Account customer is the target segment for the SEM program. However, given the complexities of a large customer and such a limited time, the IC had limited access to key account customers, restraining the avenues that could be explored to develop new energy and demand savings opportunities.
Small Business Lighting	The SBL program is running well and as intended. However, Navigant found that the primary market imperfection common to the target market for the SBL program is that additional education, funding, and increased incentive levels is needed to help increase participation for smaller businesses.

Program	Process Evaluation Findings Summary
Demand Response Incentive	Manual load shedding limits the ability of customers to participate in DR programs that require them to reduce a significant amount of load with minimal notice. Securing automated load reduction technologies is not cost-effective for many customers and cannot be accomplished using the financial incentives provided by the DRI program alone. As such, a subset of businesses is not able to participate in this program.
Whole House Efficiency	Navigant found that up-front first costs remain the largest barriers to customer participation in the WHE program. They suggest that KCP&L should continue to educate customers on the benefits of energy and cost savings, as well as emphasizing the comfort benefits of EE. Additionally, Navigant recommends that KCP&L should continue emphasizing customer participation in multiple program Tiers to encourage greater synergy and more energy savings.
Home Energy Report	The primary challenge for the program is that many customers do not receive (or recall receiving the home energy reports; 28% of CET survey respondents either did not recall receiving the report or did not read the report.
Income-Eligible Multifamily	The program is attempting to address the market imperfections—namely, limited property owner/manager investment capital for efficiency improvements and high property staff turnover—by prioritizing direct outreach to building owners and property managers.
Home Lighting Rebate	Navigant concurred with KCP&L-MO’s decision to focus on specialty LEDs in PY2018 in an effort to assist meeting overall portfolio needs, but the team also supports the reintroduction of standard LED incentives in PY2019, given the observed backsliding to halogens in PY2018.

4.2 Summary of Key Process Evaluation Recommendations

Based on the evaluation findings, Navigant provided overall evaluation conclusions and recommendations. Additionally, Navigant provided 23 overarching recommendations that they term, “the most important recommendations resulting from Navigant’s process evaluation activities for PY2018” (PY2018 Evaluation Report, p. xlvii). These recommendations are:

- KCP&L could continue to develop targeted marketing materials that clearly outline the benefits of energy conservation specific to sector. KCP&L could also focus on marketing to smaller C&I customers that have the least amount of resources to devote to researching energy conservation through routinely scheduled webinars. These webinars could be recorded and saved for those customers that aren’t able to attend.
- In general, the target market is well defined and appropriate. However, KCP&L

could continue to target specific sectors of interest within the target market such as data centers and grocery stores.

- While KCP&L does offer a wide array of measure end-uses, lighting continues to dominate in both total measures installed and claimed energy and demand savings. To address this issue, KCP&L could increase HVAC contractor involvement and consider opportunities for co-promotion of measures across programs.
- The following recommendations are provided to improve the communication channels and delivery mechanisms of the program:
 - Continue education and training of new trade allies to reduce rebate application errors.
 - The Standard program webpage could advertise eligible measures for rebates based on end-use rather than program type. Also, the targeted marketing materials online could be more accessible.
 - When sending out the rebate check, KCP&L could consider including customer service contact information for further assistance.
- Since many non-lighting end uses were moved to the Custom program, KCP&L should find ways to increase participation in the Custom program by leveraging participation in the Standard program. This could be done through trade ally training, combined marketing, and follow ups with previous participants could accomplish this. Another option is to add bonus or bundled incentives for participating in more than one program or end-use category.
- Some customers do not have the in-house engineering expertise to pursue complex custom projects. The program should continue their efforts to develop industry-specific outreach campaigns, which help customers see how custom projects benefit customers like them and offer additional technical support during the preapproval phase to help guide customers through the project process.
- KCP&L should prioritize the implementation of targeted trainings for Customer Service Managers to ensure that Customer Service Managers (CSMs) are well-equipped to promote the program to the Tier One accounts.
- KCP&L has already decided to bring exterior lighting measures back into the program, which trade allies and customers both requested. KCP&L should be sure to promote this change to lighting trade allies to avoid any missed opportunities for exterior lighting projects from trade allies who may not be aware of the change in eligibility.
- KCP&L has made significant progress in implementing industry-specific outreach campaigns and should build upon these efforts by adding industry-specific content (such as case studies) to the program website, so that the website reflects their outreach approach.
- KCP&L should continue efforts to simplify the application process and offer additional technical support to customers during the application process to ensure

that adequate technical information is captured during the preapproval phase. A tablet-based data entry tool would allow trade allies or program outreach staff to collect data during a site visit. Additionally, given the unique barriers facing new construction projects, KCP&L should develop a separate program for new construction projects, prioritizing early outreach and incentives for design professionals.

- Navigant supports GMO's decision to reintroduce standard LEDs in Q3 of PY2018 and retain support in PY2019. Navigant also encourages GMO and the IC to continue to explore the strengths and weaknesses of including fixtures, downlight kits, and emerging lighting products in the MEEIA Cycle 3 programs.
- KCP&L should continue providing reports and encouraging customers to log into the Online Energy Audit to help customers understand how to manage their energy use.
- As the program modifies the reports and adds features, KCP&L should consider assessing the effectiveness of the program with customers in multifamily homes to expand the target market.
- The program should continue to keep abreast of new ways to use and save energy to provide up-to-date tips, including tips for load-shifting, tips for using smart home devices, and EV charging.
- With launch of the new process that will enable more customers to receive email reports, high bill alerts, and other communications, KCP&L should consider additional research on the effectiveness of and the customer experience with these touch points.
- With upcoming changes to access to email reports and data granularity, KCP&L should consider tracking participation and additional research on effectiveness after the new program elements have been in place for a program year.
- Continuing to monitor the market for how the Nest solution compares to competition can help ensure the program is matching the market.
- The mix of end-use measures included in the program (i.e., PTs) meets the needs of the existing market. KCP&L could consider expanding the program to include customers that have already purchased other brands of smart/connected thermostats. In addition, KCP&L could consider expanding the BYOD customer segment through targeted marketing in MEEIA Cycle 3. BYOD programs are comparatively inexpensive to operate and a way that many utilities run thermostat programs successfully.
- KCP&L should consider further educating customers on event notification options and the purpose of DR events to reduce customer confusion and increase program satisfaction. The program should continue to focus communication channels around activating DIY thermostats that have yet to be activated.
- As noted in PY2017, KCP&L should monitor program savings targets in addition to enrollment goals to ensure that program cost-effectiveness remains high.

- CLEAResult continued using propensity modeling in PY2018 to select customers to recruit. KCP&L should continue to refine propensity modeling to select customers for the program and begin to target customers with automated curtailment capabilities.
- Navigant recommends continuing this effort in preparation for a “pay-for-performance” incentive structure in which immediate event feedback is required. Such capabilities would also allow for more periodic updates of participants’ event target values (FPLs), as recommended in PY2017.
- Navigant recommends moving to a “pay-for-performance” incentive structure to increase event participation in Cycle 3.

5 Review of Cost-Effectiveness

Navigant calculated the cost-effectiveness for the individual KCP&L-MO energy efficiency and demand response programs, as well as the cost-effectiveness of the portfolios of energy efficiency and demand response programs. Navigant calculated cost-effectiveness using the five standard benefit-cost ratios that calculate cost-effectiveness from the vantage points of different stakeholder groups:

- **Total Resource Cost (TRC) Test** - compares the benefits and costs from the perspective of all utility customers, including energy program participants and nonparticipants.
- **Societal Cost Test (SCT)** - compares the benefits and costs to all stakeholders in the utility service territory, state, or nation as a whole
- **Utility Cost Test (UCT)**- compares the benefits and costs to the utility implementing the program
- **Participant Cost Test (PCT)**- compares the benefits and costs from the perspective of the customer installing the measure
- **Ratepayer Impact Measure (RIM) Test** - compares the benefits and costs from the perspective on non-participating ratepayers, and the impact of energy programs on customer rates.

Navigant conducted these tests in a manner consistent with the 2001 California Standard Practice Manual (SPM).³ For this evaluation audit, Navigant provided output files that included measure specific cost and benefit inputs, detailed load shapes, electricity avoided costs, program administration costs, electricity rates, and other assumptions including discount rates.

The Evergreen team reviewed residential and commercial summary findings from the portfolio reports and the output files for each program and at the portfolio level to confirm that calculations were performed correctly. The specific audit tasks undertaken were to:

- Confirmed summary values included in the final evaluation report matched the values in the results file; and
- Confirmed that the reported costs matched the costs input into the cost-effectiveness input files, including administrative costs, incentive costs, and participant incremental equipment costs;

³ California Public Utilities Commission. October 2001. "California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects."

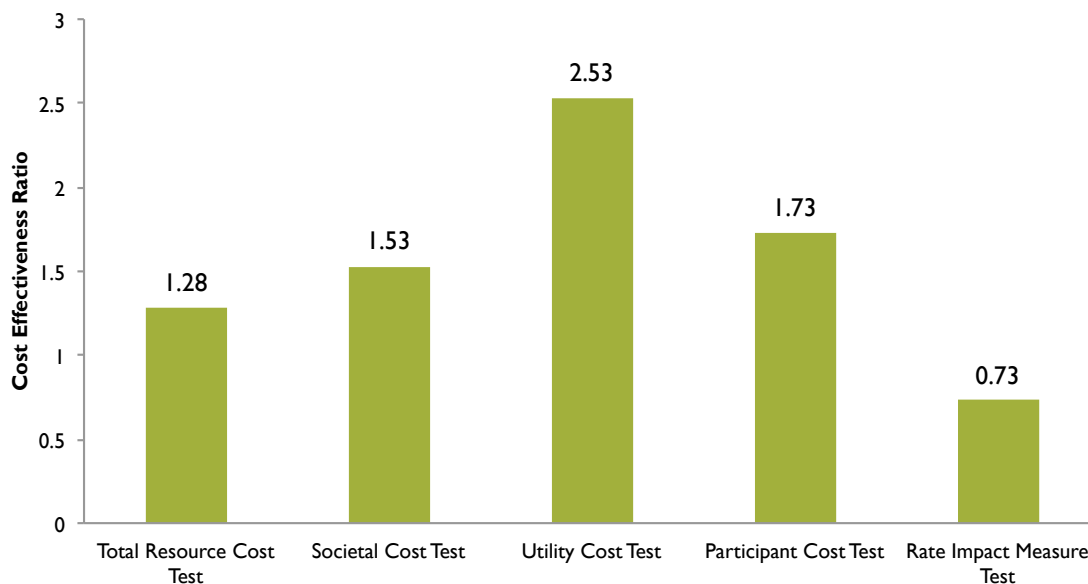
https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/CPUC_STANDARD_PRACTICE_MANUAL.pdf

- Reviewed avoided cost of energy and demand values and confirmed Navigant used appropriate values to calculate program level benefits;
- Confirm that measures received appropriate cost-effectiveness input values, from appropriate sources, consistent with the sources used in the Navigant evaluation reports (i.e., kWh savings, expected usable life (EUL), incremental cost);
- Confirmed that discount rates were appropriate.

5.1 Cost-Effectiveness Results

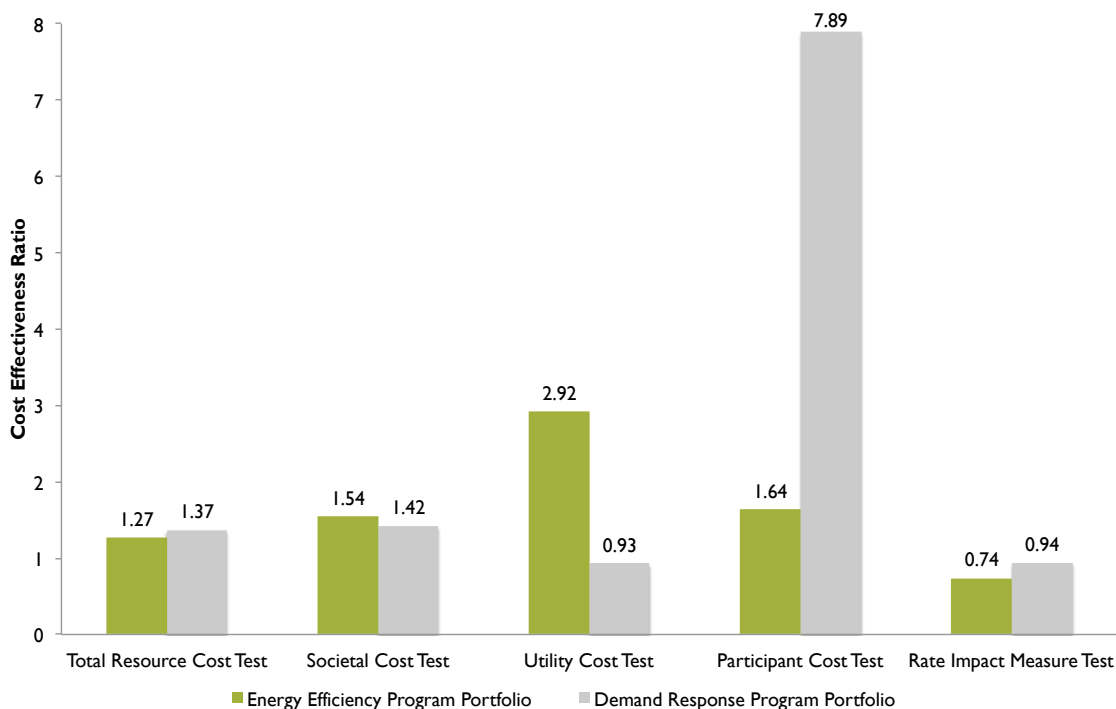
The overall KCP&L-MO program portfolio is cost-effective for the third year of MEEIA Cycle 2, PY2018. As Figure 2 shows, MO's overall energy efficiency and DR portfolio is cost-effective for all tests except the Rate Impact Test; the Rate Impact Test is the most conservative cost-effectiveness test.

Figure 2: KCP&L-MO Portfolio Level Cost-Effectiveness Test Results



Looking at the energy efficiency and demand response portfolios separately, Navigant reported similar results to the overall program. Figure 3 presents the results of the cost-effectiveness tests for the KCP&L-MO's energy efficiency and demand response portfolios. The energy efficiency portfolio is cost-effective across all tests except the Rate Impact Measure Test, while the demand response portfolio is cost-effective across all tests except the Utility Cost Test and the Rate Impact Measure Test.

Figure 3: KCP&L-MO Cost-Effectiveness Test Results – Energy Efficiency and Demand Response Portfolios



While the portfolio was cost-effective in PY2018, individual program cost-effectiveness varied. Table 11 on the following page presents the program specific cost-effectiveness test results. We also present the cost-effectiveness results for PY2017 for comparison.

Using the PCT test, all programs are cost-effective from the participant perspective, except the Block Bidding program. Ten programs are not cost-effective under the RIM test.

Table 11: Cost-Effectiveness Test Results

Program	TRC		SCT		UCT		PCT		RIM	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Business EER - Standard	1.54	1.34	1.84	1.59	3.63	4.83	1.53	1.34	0.93	0.91
Business EER - Custom	1.02	1.25	1.27	1.55	1.65	2.91	1.32	1.32	0.73	0.83
Block Bidding	0.56	0.44	0.71	0.55	0.66	0.83	2.06	0.61	0.44	0.51
Business Programmable Thermostat	1.82	0.35	2.11	0.40	2.91	0.35	0.30	1.08	2.41	0.35
Demand Response Incentive	7.59	6.89	7.59	6.89	2.42	2.02	--*	537.73	2.42	2.02
Whole House Efficiency	1.19	1.08	1.41	1.31	1.98	2.01	1.68	1.79	0.71	0.60
Home Lighting Rebate	1.12	2.05	1.24	2.28	1.77	1.83	3.14	14.87	0.44	0.42
Income-Eligible Home Energy Report	0.43	1.18	0.43	1.18	0.43	1.18	--*	--*	0.24	0.41
Home Energy Report	1.26	3.35	1.26	3.35	1.26	3.35	--*	--*	0.43	0.48
Residential Programmable Thermostat	2.33	0.34	2.70	0.39	4.67	0.30	0.76	2.20	2.50	0.31
Income-Eligible Multifamily	1.29	1.40	1.41	1.70	1.29	1.40	--*	7.00	0.40	0.37

* Ratios are infinite because there are positive benefits and no participant costs.

** Benefit-cost calculations for Home Online Energy Audit and Business Online Energy Audit not included because no savings were claimed

6 Audit Conclusions

Over the past several years, the audit team has raised a variety of issues regarding the Navigant evaluations, and we have held several working meetings with the Navigant team to work through these differences. As a result of these discussions, the major issues the audit team has raised with the prior year evaluations have largely been resolved. We appreciate the willingness of the Navigant team to work through these issues and make adjustments where needed. The audit team has no recommendations for savings adjustments for the PY2018 programs.

Several issues were raised during the reviews of the PY2018 evaluation reports, and Navigant indicated that they would consider addressing them in the PY2019 evaluations. These issues are summarized below for future reference.

HER uplift analysis for LED purchases. Currently the uplift analysis that is designed to address energy efficient program cross participation does not take into account LED's purchased through the upstream lighting program, as there are no tracking data for these purchases. It is possible that some of the energy savings estimated for the HER program are coming from LED purchases that are already being counted as part of the Home Lighting Rebate program. If this is true, then some of the HER impacts are being double counted. To address this, the audit team recommends that a survey of HER treatment and control group customers be implemented to determine if there is a statistically significant difference in the rate of LED purchases occurring between these two groups. This survey will be inexpensive to implement and we recommend that it be done as part of the PY2019 evaluation.

Programmable thermostat free ridership. For PY2018 the programmable thermostat net-to-gross ratio is set at 1.0 (i.e., no free ridership or spillover) for both kWh and kW. Since this is an opt-in program, assuming zero free ridership for demand impacts is reasonable. The smart thermostats are provided at no cost through the program, however, and therefore it is possible that there is some free ridership associated with the annual kWh impacts since some customers may have otherwise purchased the smart thermostats on their own. The issue has been raised that the evaluation should develop a separate net-to-gross ratio for energy savings to account for this. Navigant has agreed to explore this as part of the PY2019 evaluation.

Spillover estimated from trade ally interviews. For some programs, participant spillover is estimated from customer surveys while the nonparticipant spillover is estimated from the trade ally surveys. With these two different sources, there is potential that the trade ally surveys and customer surveys might be double counting spillover, as they are both referencing projects done outside the programs. Navigant acknowledges that there may be some overlap between trade allies and customers. However, the evaluation team believes

that the overall magnitude for the participant spillover is low and that that any overlap with the spillover reported by trade allies is also likely to be small. Navigant indicated that they could explore this issue by adding questions to the customer surveys to determine if customers were working with a participating contractor with these spillover measures. The audit team recommends that these questions be added in future surveys.

Illinois TRM versions. The current evaluation report reference both the Illinois TRM version 5 and version 7, with no information provided on the process used to determine which version is used in any given situation. Navigant has agreed to use only the Illinois TRM version 7 beginning in PY2019.

Appendix A: Full Process Evaluation Responses to Minimum Question Requirements

This appendix provides a summary of the detailed responses to minimum process evaluation requirement questions.

Table 12: Minimum Process Evaluation Questions

Issue Number	Question
Issue 1	What are the primary market imperfections common to the target market segment?
Issue 2	Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?
Issue 3	Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target market segment?
Issue 4	Are the communication channels and delivery mechanisms appropriate for the target market segment?
Issue 5	What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each end-use measure included in the program?

Table 13: Issue 1 - What are the primary market imperfections common to the target market segment?

Program	2017 Summary Response	2018 Summary Response
Business EER - Standard	<p>Smaller C&I customers have limited resources for researching energy conservation. Developing targeted marketing materials can help these customers implement energy conservation measures.</p> <ul style="list-style-type: none"> • KCP&L focused on developing targeted marketing materials for certain segments to help explain the benefits of implementing energy conservation. For example, KCP&L developed a good, better, best marketing campaign for high bay lighting to make comparing LED high bay fixtures to metal halide or linear fluorescent fixtures more straightforward. Alongside this marketing campaign, they created a sales incentive specifically for LED high bays for the trade-allies to encourage them to sell before the end of the year. While most high bay measures were installed in larger facilities such as industrial sites or warehouses, over 30% of the high bay projects in PY2017 were installed in Retail, School, Office, and Other building types. This indicates that high bay measures are present in many building types and marketing campaigns may increase uptake of these measures independent of facility size. The good, better, best analysis for high bays also provided a framework that the business owner could use for other applications. 	<p>The target market faces a high barrier to make an energy efficiency upgrade due to the first cost and a lack of understanding of lifetime value for energy efficient products. KCP&L-MO addresses the barrier by providing incentives which reduce the incremental cost. In addition, there are many smaller C&I customers that have limited resources for researching energy conservation, leading to imperfect or incomplete information about the market. KCP&L- MO has developed targeted marketing materials to increase participation of smaller.</p> <ul style="list-style-type: none"> • KCP&L focused on developing targeted marketing materials for certain segments to help explain the benefits of implementing energy conservation. In PY2016 the majority of energy savings came from industrial and warehouse building types. In contrast, more than 80% of energy savings came from measures installed in “Retail”, “School”, “Office”, and “Other” building types in PY2018. This indicates that marketing materials and campaigns may have increased the participation of various types and sizes of facilities.

Program	2017 Summary Response	2018 Summary Response
Business EER - Custom	<p>The custom program targets various; complex projects that require concerted effort beyond those in the standard program. In doing so, it rewards participants with greater savings and value by going beyond the lowest price point or fastest payback.</p>	<p>KCP&L has continued its strategy of targeted marketing campaigns towards specific market segments and successfully expanded its network of participating trade allies.</p> <ul style="list-style-type: none"> • KCP&L conducted targeted marketing campaigns for specific market segments: healthcare, data centers, new construction, and industrials. However, other than the industrial sector, few of the participating trade allies reported that they market high efficiency to these sectors. • KCP&L increased the amount of outreach and education offered to trade allies, particularly with regard to non-lighting measures. These outreach efforts included webinars focused on chillers and data centers, a trade ally newsletter, and sales training. • KCP&L program staff has some concerns about Tier One customers opting out of the EE rider. They are eager to use the Custom program as a mechanism for demonstrating the additional value that KCP&L can bring to the table beyond simply recouping the cost of the rider. • KCP&L is considering the development of a separate program component focused on new construction projects, which may help them implement more targeted strategies to overcome market barriers specific to those projects.

Program	2017 Summary Response	2018 Summary Response
Block Bidding	<p>Large customers targeted by the Block Bidding program pose two unique challenges, which KCP&L is actively trying to address. First, large customers have often opted out of KCP&L's rebate programs because incentive caps precluded them from getting out the same value that they are putting in to the program, limiting the pool of Block Bidding-eligible customers. Second, large projects are complex and have long lead times (often 18+ months) that do not fit into annual rebate program timelines. KCP&L took the following steps to address these problems:</p> <ul style="list-style-type: none"> • For PY2017, KCP&L used a split cap, meaning that projects that are over the Custom program's incentive cap of \$100,000 or the Standard program's incentive cap of \$400,000 will be eligible to participate in the Block Bidding program. <ul style="list-style-type: none"> ○ Both completed projects for PY2017 exceeded their Custom incentive cap. • A new component, the Buy Now option, helps overcome the second barrier by allowing customers whose project timelines do not align with the scheduled auction dates to still take advantage of BB funds. <ul style="list-style-type: none"> ○ Both completed projects for PY2017 used the Buy Now option. • KCP&L is flexible in extending project completion dates if the project or TA demonstrates sufficient movement toward completion. 	<p>Large customers targeted by the Block Bidding program pose two unique challenges. First, large customers have opted out of KCP&L's rebate programs because incentive caps precluded them from receiving the same value that they were putting into the program. In addition, KCP&L is transitioning the incentive design from kWh saved to kW saved, which could further discourage large customers from opting back in to KCP&L rebates due to perceived uncertainty around the potential rebate amounts. Second, trade allies and customers are not aware of or familiar with the Block Bidding program.</p> <ul style="list-style-type: none"> • The incentive structure and cap were simplified in PY2018. The reverse auction option was also discontinued so customers do not have to meet a scheduled auction date to take advantage of the Block Bidding funds. • KCP&L worked with the implementer on trade ally training since all Block Bidding projects came through the trade allies in PY2018. The implementation contractor held monthly trainings for new and existing trade allies to become familiar with the program and offer sales strategies showing how the Block Bidding program can further lower a project's cost and increase EE. They also produced monthly newsletters and participated in trade ally forums. However, because there were no auctions in PY3, the marketing and awareness of the program was limited through the Custom program and Custom webpage.

Program	2017 Summary Response	2018 Summary Response
SEM	<p>The primary market imperfections are that customers have a limited amount of time and money to devote to energy conservation.</p> <ul style="list-style-type: none"> • There are number of factors that are cost- or time-prohibitive for many C&I customers: • The cost of having an outside expert perform an extensive onsite assessment • The cost and time to submit a report outlining identified measures • The cost and time to develop the onsite expertise on how to implement the recommended measures <p>In addition, many C&I customers do not have the time needed to oversee or facilitate an effort such as SEM.</p>	<p>As identified in the PY2017 report, the time and money needed to participate in SEM activities continues to be a market imperfection identified in this program. This was exemplified by most of the customers needing assistance in maintaining this energy model.</p>
Small Business Lighting	<p>A major market imperfection identified through this program was the time and money needed to participate in these types of activities. KCP&L is considering creating a Shared Energy Manager position to help the customers save both time and money.</p>	<p>The primary market imperfection common to the target market for the SBL program is that most of the customers that qualify for the program have less resources such as time and money to pursue the efficient lighting projects.</p> <ul style="list-style-type: none"> • Small business customers are likely to be limited in both time and money to pursue lighting projects that could lead to fast paybacks. The SBL program addresses this issue in two ways. First, the incentive levels are higher than the Standard program—with up to 70% of project costs to help with the lack of available funds. Second, the trade ally facilitates the incentive process by proposing the efficient lighting solution, managing the preapproval process, and handling the rebate.

Program	2017 Summary Response	2018 Summary Response
Demand Response Incentive	<p>Two main barriers for participating in the DRI program are: (1) businesses do not have automatic load curtailment; and (2) for some customers, the point of contact (as indicated on the contract) neglected to pass the event notification onto the individual who can manually curtail load at the customer site.</p>	<p>The PY2017 report cited two main barriers for participating in the DRI program: (1) businesses do not have automatic load curtailment; and (2) for some customers, the point of contact (as indicated on the contract) neglected to pass the event notification onto the individual who can manually curtail load at the customer site. PY2018 revealed the importance of one additional barrier: (3) lack of real-time feedback following DR events.</p>
Whole House Efficiency	<p>The program Operations Manual identifies lack of education for both end-use consumers and trade allies as a primary barrier to residential energy efficiency upgrades, along with high upfront costs—particularly for HVAC purchases. Surveyed participants and trade allies alike support that view.</p> <ul style="list-style-type: none"> • Cost continues to be a barrier to residential energy efficiency upgrades, especially for HVAC purchases. However, increased Tier 3 participation may be an indicator that the program is having some success addressing this barrier by affecting customers’ willingness to replace still- functioning equipment. This aligns with the reports from trade allies during the PY2016 surveys and with input provided by the program’s product manager and implementation manager in PY2017. 	<p>The program Operations Manual identifies lack of education for both end-use consumers and trade allies as a primary barrier to residential EE upgrades, along with high upfront costs—particularly for HVAC purchases. Surveyed participants and trade allies alike support that view.</p> <p>Cost continues to be a barrier to residential EE upgrades, especially for HVAC purchases. KCP&L and the implementer have made strides in this area by streamlining messaging to encourage customer participation in Tiers 2 and 3. The majority of WHE savings is attributed to HVAC measures, but it is still important to continue educating the consumer that the lowest cost option is not always the lowest cost in the long-run, nor is the first cost the only consideration. KCP&L should also continue to emphasize the non-energy benefits of EE, including home comfort factors.</p> <p>Participants in the Whole House Efficiency program tend to be largely middle-class, with fewer programmatic options available to low-income residents.</p>

Program	2017 Summary Response	2018 Summary Response
Home Lighting Rebate	<p>The program seeks to address imperfections of price, availability, and consumer knowledge of efficient lighting choices. The program has made strong progress on each, offering incentives that reduce the shelf price of LEDs, diversifying the retail channels and venues through which consumers can buy supported LEDs, and engaging in marketing and educational campaigns that explain the benefits of energy efficient lighting. The great success of the program in PY2016 led to budget reductions to maintain Cycle 2 portfolio spending caps. Therefore, the program now focuses primarily on reducing the shelf price and increasing the availability of specialty LEDs.</p>	<p>The program seeks to address imperfections of price, availability, and consumer knowledge of efficient lighting choices. The program has made strong progress on each, offering incentives that reduce the shelf price of LEDs, diversifying the retail channels and venues through which consumers can buy supported LEDs, and engaging in marketing and educational campaigns that explain the benefits of energy efficient lighting. The great success of the program in PY2016 and PY2017 led to focus primarily on reducing the shelf price of specialty LEDs.</p> <ul style="list-style-type: none"> • The HLR program reduced the shelf price of standard LEDs by \$1.18 from \$3.80 to \$2.61. For specialty LEDs, the program reduced the price by \$1.53 from \$4.50 to \$2.96. Manufacturers and retailers sometimes added their own discounts to reduce the shelf price further.

Program	2017 Summary Response	2018 Summary Response
Home Energy Report & Income-Eligible Home Energy Report	<p>Some residential customers do not understand how their behaviors, appliances, and electronic devices can affect their energy use and contribute to their monthly bills. Customers are also unaware of cost-effective strategies to reduce energy in their home.</p> <ul style="list-style-type: none"> • The PY2017 program targeted over 102,000 customers to receive five HERs. An additional 25,000 customers served as a control group in the experimental design. The PY2017 IE-HER program targeted over 15,000 customers to receive five HERs, with 9,000 customers in the control group. • Based on responses to the CET, 73% of treatment customers agree that KCP&L provides tools to help customers learn about energy use. Furthermore, 71% of treatment customers report that the energy efficiency tips on the report are useful, while 61% report that the HERs help the customer make better decisions to use and save energy. 	<p>Some residential customers do not understand how their behaviors, appliances, and electronic devices can affect their energy use and contribute to their monthly bills. Customers are also unaware of cost-effective strategies to reduce energy in their home.</p> <ul style="list-style-type: none"> • The PY2018 program targeted over 76,000 customers to receive four HERs. An additional 18,000 customers served as a control group. The PY2018 IE-HER program targeted over 10,000 customers to receive four HERs, with over 6,000 customers in the control group. • Based on responses to the CET, 79% of treatment customers agree that KCP&L provides tools to help customers learn about energy use. Furthermore, 71% of treatment customers report that the EE tips on the report are useful, while 64% report that the HERs help the customer make better decisions to use and save energy.

Program	2017 Summary Response	2018 Summary Response
Income-Eligible Multifamily	<p>The target market for this program is low income, multifamily residents, targeting both owners and tenants. Program implementation staff reports that a key barrier to penetrating the target market is the ability to identify qualifying properties (discussed in more detail in Question 2.) In addition, as found in the PY2016 evaluation, the target market generally has limited capital availability and low awareness of energy efficiency options.</p> <p>The program has prioritized direct outreach to building owners/managers to increase awareness of the IEMF program and energy efficiency opportunities. Program staff reports that the direct outreach and in-person efforts have been the most effective outreach strategy to increase program awareness and encourage participation among this customer segment.</p>	<p>The target market for this program was low-income multifamily properties, targeting both property owners and managers for building efficiency improvements, and tenants for direct install measures. This market generally has limited capital availability and property management staff experience high turnover.</p> <ul style="list-style-type: none"> • The primary difficulty in this market is the inability of income-eligible tenants to afford custom energy efficiency (EE) measures, and the limited incentive for property owners and managers to increase EE when the tenants pay the utility bills. • Another obstacle to this market is high turnover among property managers. According to the implementation manager, there was approximately a 50% turnover among this group from PY2017 to PY2018. • The program continues to prioritize direct outreach to property owners and managers through phone calls and in-person visits to increase awareness of the IEMF program. Implementation staff reported that they have more robust relationships with property owners and managers because of these interactions. Implementation staff also tried other outreach strategies in PY2018 including lunch and learns events and appreciation dinners. However, these types of events were ineffective as many customers signed up to participate but then did not attend the events.

Program	2017 Summary Response	2018 Summary Response
Residential and Business Programmable Thermostat	<p>Utilities use residential and small commercial thermostat DR programs to obtain needed demand reductions. The programs address the fact that traditional rate structures do not provide customers appropriate incentives to reduce electricity usage during peak periods.</p> <ul style="list-style-type: none"> • KCP&L calls curtailment events during which Nest cycles participants' HVAC systems to achieve aggregate demand reductions. If DR resources are large enough, they can offset enough demand to delay or avoid the need to purchase power at spot market prices or invest in new sources of generation to meet peak summer demand. DR is a form of negative generation and can be called on during periods of high demand in the same manner as a peaking power plant might be built and brought online to serve the same end, but at a lower cost. • In addition, the Nest learning thermostat adjusts to customer behavior year-round; this enables energy savings throughout the year, not only during event hours. Unlike the previous Honeywell thermostats, customers can remotely control their Nest devices, which also enable year-round energy savings. 	<p>Utilities use residential and small commercial thermostat DR programs to obtain needed demand reductions. The programs address the fact that traditional rate structures do not provide customers appropriate incentives to reduce electricity usage during peak periods.</p> <ul style="list-style-type: none"> • KCP&L calls curtailment events during which Nest increases the set point of a customer's thermostat by three degrees in order for the HVAC system to achieve aggregate demand reductions. If DR resources are large enough, they can offset enough demand to delay or avoid the need to purchase power at spot market prices or invest in new sources of generation to meet peak summer demand. DR is a lower cost means of reducing demand and thus the need for generation and can be called on during periods of high demand in the same manner as a peaking power plant—which might be built and brought online to serve the same end. • The Nest learning thermostat adjusts to customer behavior year-round; this enables energy savings throughout the year, not only during event hours. Unlike the previous Honeywell thermostats, customers can remotely control their Nest devices, which also enable year-round energy savings.

Table 14: Issue 2 - Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?

Program	2017 Summary Response	2018 Summary Response
Business EER - Standard	<p>KCP&L has a well-defined target market (C&I) for the Standard program. No further subdivisions appear necessary given current program participation.</p> <ul style="list-style-type: none"> • All of KCP&L's C&I customer classes have participated in the Standard program. • KCP&L considers the Custom program complimentary to the Standard program since both programs target some of the same customers but focus on different measures. • KCP&L is actively tracking the sales cycle to understand sales conversion from prospective to completed projects in the targeted market. They are working to identify areas to improve sales conversions of all customer types. 	<p>KCP&L has a well-defined target market (C&I) for the Standard program. No further subdivisions appear necessary given current program participation.</p> <ul style="list-style-type: none"> • KCP&L and their implementer track which trade allies are most active and routinely consider how they could improve their program by increasing their breadth of trade allies that have different niches or cater towards different types of customers. • KCP&L actively tracks the sales cycle to understand sales conversion from prospective to completed projects in the targeted market. They are working to identify areas to improve sales conversions of all customer types.

Business EER - Custom

KCP&L is narrowing its target market segment for the purpose of new customer acquisition. The program would benefit from continued alignment of its trade ally network with these efforts.

- KCP&L identified K-12 schools, data centers, and new construction projects as its target market segments for the Custom program in PY2017.
- One customer was a school and one customer was a data center in PY2017.
- Navigant confirmed with CLEAResult that new construction projects are tracked within the program tracking system. Navigant will request this information in PY2018 to better understand whether new construction participation is increasing in response to program efforts.

The measures targeted by the custom program are more complex and have more uncertainty in energy savings than those in the standard program, which makes customers less likely to install them without the education and financial incentives offered by the program. KCP&L identified K-12 schools, data centers, and new construction projects as its target market segments for the Custom program in PY2017.

- The types of measures targeted by the custom program are more complex than the types of measures offered by standard programs. Specifying and selling these types of efficiency measures requires more technical knowledge on the part of the trade ally, meaning that a lack of trade ally awareness and knowledge can inhibit widespread market adoption. Navigant confirmed with CLEAResult that new construction projects are tracked within the program tracking system. Navigant will request this information in PY2018 to better understand whether new construction participation is increasing in response to program efforts.

- New construction projects face some of the more challenging barriers. Program staff noted the importance of reaching customers before/during the design stage of a new construction project and observed that designers are paid by the hour and therefore unlikely to spend time on developing specifications for EE unless the customer is paying them for it. Therefore, the customer has to value EE and be aware of the opportunity to receive KCP&L incentives at the design stage for the program to have

Program	2017 Summary Response	2018 Summary Response
Block Bidding	<p>The target market is defined as any customer or trade ally with a large enough capacity to exceed the Custom or Standard incentive cap, and achieve 1 million kWh in savings. KCP&L saw limited participation amongst existing customers in past years and in response is looking to update the Block Bidding target market to increase participation.</p>	<p>the opportunity to influence new construction projects.</p> <ul style="list-style-type: none"> • One trade ally emphasized the importance of streamlining program preapproval requirements to be able to capture new construction programs, noting that new business owners were missing opportunities to incorporate EE into their buildings “because they want to open the doors, they do not have the additional time to wait for preapproval for higher efficiency designs. Time is money, every day waiting for the doors to open is a dollar lost.” <p>The target market is defined as any customer or trade ally with projects large enough to exceed the Custom or Standard incentive cap. Despite the fact that all of KCP&L’s C&I programs that are geared towards large end-users complement each other, KCP&L saw limited participation among existing customers in past years and is looking to update the Block Bidding target market to increase participation.</p>

Program	2017 Summary Response	2018 Summary Response
SEM	<p>KCP&L has a well-defined target market for the SEM program. KCP&L's SEM team works with its key accounts team to identify high energy usage customers with approximately 10 MWh of annual consumption and then validates whether these customers have the savings potential to participate in the program by conducting onsite visits.</p> <ul style="list-style-type: none"> To achieve this ideal megawatt-hour threshold, KCP&L targets customers from the industrial, commercial, and public (customers with multiple sites that have shared knowledge and experiences between their sites, including healthcare, municipalities, and schools) sectors. 	<p>KCP&L has a well-defined target market for the SEM program. KCP&L's SEM team works with its key accounts team to identify high energy usage customers with approximately 10 MWh of annual consumption and then validates whether these customers have the savings potential to participate in the program by conducting onsite visits. A planned, intentional reduction in customer support and engagement led to the decline in participation in PY2018.</p>

Small Business Lighting

KCP&L made some small adjustments in PY2017 to the qualification criteria to further define the customer segment for the SBL program.

- The SBL program targets small business customers who have an average monthly coincident peak demand of 100 kW or lower. This kilowatt cap applies if it is a single account and single meter, or if there is a single account with multiple meters, or if the customer has multiple accounts and multiple meters. The previous threshold was 250 kW for multiple meters or multiple accounts, but KCP&L and the implementer changed this to better target the small business customer. The lower demand helps to identify the small business owner who could benefit from additional incentives and education about efficient lighting measures.
- Some additional groups that might benefit from the higher incentives and additional energy efficiency (EE) education are non-profit organizations such as churches or community centers. These organizations tend to have limited budgets for improvements. However, in some cases these organizations did not qualify for the SBL program due to their coincident demand being higher than 100 kW.

All applications submitted to the SBL program by a trade ally goes through a preapproval process where the implementer confirms that the project is eligible for the program. This allows for the program to be

The target market is well defined but could be expanded to different groups.

- The SBL program targets small business customers who have an average monthly coincident peak demand of 100 kW or lower. The low demand helps to identify the small business owner who could benefit from additional incentives and education about efficient lighting measures.
- Some additional groups that might benefit from the higher incentives and additional EE education are non-profit organizations such as churches or community centers. These organizations tend to have limited budgets for improvements. However, in some cases these organizations did not qualify for the SBL program due to their coincident demand being higher than 100 kW.
- All applications submitted to the SBL program by a trade ally goes through a preapproval process where the implementer confirms that the project is eligible for the program. This allows for the program to be consistent in which customers are part of the SBL program.

Program	2017 Summary Response	2018 Summary Response
Demand Response Incentive	<p>consistent in which customers are part of the SBL program.</p> <p>The target market segment is defined as all commercial customers that can reduce their demand to at least 25 kW below estimated peak usage when a curtailment event is called between June 1 and September 30 of a given year.</p>	<p>The target market segment is defined as all commercial customers that can reduce their demand to at least 25 kW below estimated peak usage when a curtailment event is called between June 1 and September 30 of a given year.</p>
Whole House Efficiency	<p>KCP&L’s primary target audience for this program is broadly defined as owners of single-family homes, although 2-unit to 4-unit residences and renters are also eligible.</p> <ul style="list-style-type: none"> The program continues to target single-family homes and 2-unit to 4-unit residences. The implementation team has employed participant targeting techniques to identify homes with large savings potential based on the concentration of single-family homes within a community, the age of those homes, previous program participation patterns in the community, and demographics. 	<p>KCP&L’s primary target audience for this program is broadly defined as owners of single-family homes, although 2-unit to 4-unit residences and renters are also eligible. There may be an opportunity to address a gap in the multifamily ‘market-rate’ segment, however. There are currently programmatic offerings for income-eligible multifamily, but nothing targeted toward general multifamily residences that are on Residential meters.</p> <p>KCP&L is planning to address this market gap via a market-rate multifamily incubator program for Cycle 3. The program is likely to utilize a modified version of the Income-Eligible Multifamily program TRM for evaluation purposes.</p>

Program	2017 Summary Response	2018 Summary Response
Home Lighting Rebate	<p>The program appropriately defines the target market as all residential customers. PY2016 results suggested that targeted marketing may help recruit additional hard-to-reach (HTR) customers (i.e., income-eligible households, renters, non-English speaking households, bargain store shoppers), but the recent incentive budget reductions have limited the ability of KCP&L-MO and the IC to expand outreach to HTR customers.</p> <ul style="list-style-type: none"> • Although many materials are available in both English and Spanish, the program did not develop marketing that specifically targeted HTR customers. This is appropriate given the need to manage HTR program expenditures to the remaining budget. The program will continue to provide incentives and marketing support for standard LEDs in the discount channel, which disproportionately serves the HTR population. 	<p>The program appropriately defines the target market as all residential customers. Even though KCP&L-MO focused most incentive efforts in PY2018 on specialty LEDs, they retained incentives for standard LEDs in the Discount channel for the first few months of PY2018 in an effort to make these bulbs available to hard to reach customers.</p> <ul style="list-style-type: none"> • Discount stores accounted for 24% standard LED sales attributed to PY2018, but the discount portion of sales varies by quarter. In Q1 of PY2018, the quarter with the largest amount of holdover PY2017 sales, Discount stores accounted for only 18% (4,098) of standard LED sales (22,399). In Q2, Discount stores accounted for 33% (5,282) of the standard LED sales (16,085). The program sold only 269 standard LEDs across all channels in Q3 and Q4, 24% (78) of those in the Discount channel.

Program	2017 Summary Response	2018 Summary Response
Income-Eligible Home Energy Report and Home Energy Report & Income-Eligible Home Energy Report	<p>The target market segment is appropriately defined as residential customers in single- family homes.</p> <ul style="list-style-type: none"> • The initial waves included the highest energy users. • As the program adds waves, the new waves include customers beyond the highest energy users. For example, the 2016 wave includes customers that have lower baseline energy use (about 25 kWh per day compared to 32 kWh per day for the 2014 High Users wave). <p>IE-HER targets low income customers with messaging that focuses on low cost and no cost energy-saving tips.</p>	<p>The target market segment is appropriately defined as residential customers in single- family homes.</p> <ul style="list-style-type: none"> • The initial waves included the highest energy users. • As the program adds waves, the new waves should continue to include customers beyond the highest energy users. For example, the 2016 wave includes customers that have lower baseline energy use (about 29 kWh/day compared to 34 kWh/day for the 2014 wave). • IE-HER targets low income customers with messaging that focuses on low cost and no cost energy-saving tips.
Residential and Business Programmable Thermostats	<p>The target market appropriately addresses residential and small commercial customers. The Demand Response Incentive (DRI) program provides DR opportunities for large C&I customers.</p>	<p>The target market appropriately addresses residential and small commercial customers. The Demand Response Incentive (DRI) program provides DR opportunities for large C&I customers.</p>

Program	2017 Summary Response	2018 Summary Response
Income-Eligible Multifamily	<p>The market for income-eligible multifamily is currently defined using the federal poverty level income guidelines and is largely limited to federally subsidized properties as identified in the National Housing Preservation database. Program staff reports that a key barrier to participation is determining other non-subsidized properties that might be eligible for participation in the IEMF program.</p> <p>KCP&L-MO defines the target market of income-eligible customers as multifamily properties that are either subsidized or occupied by more than 50% tenants who have household incomes below 200% of federal poverty level income guidelines, which translates to less than \$23,760 per year for a single person or \$48,600 per year for a family of four.</p>	<p>The market for the IEMF program in PY2018 was defined using the Federal Poverty Income guidelines. However, program staff noted alternative methodologies for identifying income-eligible multifamily units and described some difficulty in identifying all eligible properties.</p> <ul style="list-style-type: none"> • KMO defines the target market of income-eligible customers as multifamily properties that are subsidized federally or at the state level, or if 50% or more of tenants have household incomes that are at or below 200% of the Federal Poverty Limit. Per the implementation manager, they can validate federal or state subsidy receipts for properties. However, validating that 50% or more of tenants are at or below 200% of the Federal Poverty Limit has been challenging. Regarding the latter, the implementation team is relying on estimates based on rent rolls or validation from property owners and managers. • The definition of income-eligible will be broadened in MEEIA Cycle 3 to include Census tract information and average income at the Census tract level. Program staff reported that this revised definition will aid in targeting eligible properties.

Table 15: Issue 3 - Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target market segment?

Program	2017 Summary Response	2018 Summary Response
Business EER - Standard	<p>While the Standard program addresses a participant's water heating, lighting, refrigeration, and manufacturing energy end-uses, 95% of the projects in PY2017 were for lighting measures.</p> <ul style="list-style-type: none"> The Standard program complements the other Business EER programs, specifically the Custom program, by providing rebates for the more straightforward projects. KCP&L is working to better align the two programs. <p>From the customer perspective, the Standard program and the Custom program is one programming not two programs. Most of the measures that are not covered by Standard are covered by another program. The program is not intended to stand-alone from the customer perspective but be considered an integrated C&I portfolio.</p>	<p>While the Standard program includes many measures that address a participant's water heating, refrigeration, and HVAC energy end-uses, 97% of the projects in PY2018 were for lighting measures. Primarily other KCP&L Business EER programs address these other end-uses.</p> <ul style="list-style-type: none"> The Standard program complements the other Business EER programs, specifically the Custom program, by providing rebates for common energy efficiency upgrades, which are primarily lighting measures. KCP&L is working towards further aligning the Standard and Custom programs, so that multiple end-use energy saving projects can be easily served across the entire portfolio. From the customer perspective, the Standard program and the Custom program are one program not two programs. Most of the measures not covered by Standard are covered by another program. The intention of the Standard program is not to be a stand-alone program, rather considered as an integrated part of the C&I portfolio.

Business EER - Custom

The Custom program complements the Standard program and provides a diverse mix of end-use measures that do not qualify for Standard rebates. Projects with incentives of more than \$100,000 exceed the Custom cap and will be eligible for the Block Bidding program.

Between the Custom program and KCP&L's other C&I offerings, trade allies and customers are able to receive rebates for all of the measures they are interested in, with the exception of exterior lighting, which has been added back into the program for PY4.

- When asked if there were any measures that they wanted the program to start offering, the surveyed trade allies most often answered “exterior lighting.”
 - KCP&L added exterior lighting back into their program for PY4 of Cycle 2.
 - Overall, the Custom program's measure mix is comparable to other custom programs evaluated by Navigant.
-

Block Bidding

The Block Bidding program addresses participants' need for large energy efficient projects that exceed the financial caps of KCP&L's other C&I programs. While the program should remain open-ended in terms of the measures that are eligible, KCP&L is working to identify specific end use measures for targeted marketing that are most likely to make up these larger projects.

- The Block Bidding program encompasses all end uses and addresses projects that save more than 1 million kWh per year. Projects can be implemented across multiple buildings or properties to allow for greater savings.
- KCP&L initiated informal conversations with new TAs and players in the aforementioned target segments, and past customers, to better understand which end use measures fit these customers' specific needs.

Both completed projects for PY2017 were lighting upgrades for customers who exceeded their Custom cap across several different projects.

The Block Bidding program addresses participants' need for large energy efficient projects that exceed the financial caps of KCP&L's Custom and Standard programs. While the program should remain open-ended in terms of eligible measures, KCP&L is working to identify specific end use measures for targeted marketing that are most likely to make up these larger projects.

- The Block Bidding program encompasses all end uses and addresses projects with high energy and demand impacts. Projects can be implemented across multiple buildings or properties to allow for greater savings.
- KCP&L should continue observing trends in the types of projects completed through the program and extract the most successful and satisfying measures to use for case studies. These case studies can then be used as marketing material to increase participation.

SEM

The SEM program addresses all the major energy end-uses for the majority of participants.

- The SEM program focuses on behavior-based and no cost/low cost measures that may fall under any major end use.
- Overall, the SEM program can address any end use at a facility if there are possible behavior-based, no cost/low cost measures available. Other Business EER programs like Standard and Custom are available to address non-behavior-based needs.

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-

Small Business Lighting

The lighting measures provided by the SBL program cover the wide range of lighting types that may be present in a small business. Expanding to other end-use categories may be worth considering for Cycle 3 as part of a small business direct install program.

- The incentives available for the SBL program range from less than \$1 for a 28 W 4-foot fluorescent lamp to more than \$450 for LED high bay fixtures replacing a fixture with more than 750 W. This large range in available rebates exemplifies the diversity of lighting measures available in the SBL program.

If the SBL program were to expand to another end-use category, other rebates could focus on heating or cooling measures, water saving measures, or refrigeration measures.

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Demand Response
Incentive

The mix of end-use measures included in the program appropriately reflects the diversity of end-use energy service needs and existing end-use technologies within the target segment.

- There was no change in mix of end-use measures in PY2017. Participants control how they meet their demand reduction obligations through curtailing or rescheduling end uses, using backup generators, or both.
- End-use options that can be chosen include but are not limited to: rescheduling use to off-peak time; temporarily shutting down factory production lines; reducing motor, process, lighting, and cooling loads; and turning off or lowering water heater set points.

In PY2017, the energy consultants (ECs) and CLEARResult representatives worked with many existing customers to confirm that their end-use technologies contracted to curtail were in fact curtailable before the event season to help ensure surprises did not occur during event season.

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Whole House Efficiency

Across the three program tiers, the program offers measures that cover most of the common energy end uses in residential homes. However, most energy savings and participation comes from air conditioning units and heat pumps, with little participation in the heat pump water heater, air sealing, or insulation measures.

STATUS: Participation across all measure tiers increased in PY2017, including more than triple participation in Tier 3 measures in PY2017 compared to PY2016. This increase resulted in PY2017 verified energy savings that were more than double the amount in PY2016.

The WHE program added several new measures in PY2017 and phased out others.

- Tier 1: LED bulbs of varying wattage values contributed 5% and 1% of verified gross energy and demand savings, respectively, in PY2017. A new furnace filter alarm measure contributed an additional 0.02% and 0.01% of verified gross energy and demand savings, respectively.
- Tier 2: Window measures were phased out completely in PY2017. The 13 windows that came through the program during the phase out contributed an additional 0.01% and 0.003% of verified gross energy and demand savings, respectively.

Tier 3: The program added new HVAC tune-up, refrigerant charge adjustment, and coil cleaning measures. These new measures contributed 17% of energy savings and 18% of demand savings in PY2017.

The program offers measures that cover most of the common energy end uses in residential homes. However, most energy savings and participation come from air conditioning units and heat pumps, with little participation in the heat pump water heater, air sealing, or insulation measures.

The program maintained participation across all measure tiers similar to PY2017, including sustained participation in the HVAC-focused Tier 3. The WHE program continues to evaluate the cost-effectiveness of existing measures and that of potential new measures.

Home Lighting Rebate

The program supported standard and specialty LEDs through PY2017, but it will focus mainly on specialty bulbs in PY2018 to maintain budget integrity. This design makes sense given the budget constraints.

- Suppliers interviewed in PY2016 suggested that the program add LED downlight and retrofit kits and integrated LED fixtures. In-depth interviews with program and IC staff in PY2017 suggest that they are considering these additions for MEEIA Cycle 3.

The program budgetary constraints mean that KCP&L-MO must decide how to spend limited funds in an efficient manner. However, this focus on specialty bulbs may strain KCP&L-MO's ability to achieve gross and net savings targets given lower specialty sales and NTG ratios. If this occurs, KCP&L could provide a special offer on standard LEDs in PY2018 to meet overall MEEIA Cycle 2 targets, although this is unlikely, as KCP&L's Product Manager has indicated, based on portfolio performance, they are unlikely to invest further funds towards the HLR program in MEEIA Cycle 2.

The program focused incentives on specialty LEDs in PY2018 to allow KCP&L-MO to move resources from the high-performing HLR to other programs in the KCP&L-MO portfolio. Although the specialty focus makes sense for the program portfolio, specialty applications only meet a small portion of end-use energy service needs of the target market.

- KCP&L-MO will reintroduce standard LED incentives to the program in PY2019, which will increase the degree to which the program meets end-use energy service needs.
- Suppliers interviewed in PY2016 suggested that the program add LED downlight and retrofit kits and integrated LED fixtures. In-depth interviews with program and IC staff in PY2017 suggest that they are considering these additions for MEEIA Cycle 3.

Home Energy Report
and Income-Eligible
Home Energy Report

HERs provide a diverse set of suggestions that target all residential end uses. The focus of the report is to modify behaviors; therefore, the program does not offer rebates for specific measures but does promote rebates provided through other KCP&L programs.

- These tips include many low cost and no cost actions and suggestions to buy efficient equipment and appliances.
- The tips cover the main residential electricity end uses: lighting, HVAC, electronics, water heating, appliances, and pools.
- The print reports also cross-promoted Nest thermostats and rebates for air conditioners or heat pumps through KCP&L-MO programs. The email reports included messaging on Energy Analyzer, air conditioner tune-ups, rebates on a new air conditioners or heat pumps, seasonal umbrella messaging about KCP&L programs, Nest thermostats, and in-home assessments.

Based on the evaluation survey, 10%-20% of treatment customers own smart home assistants, home security, smart light bulbs, or smart appliances.

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- These tips include many low cost and no cost actions and suggestions to buy efficient equipment and appliances.
- The tips cover the main residential electricity end uses: lighting, HVAC, electronics, water heating, appliances, and pools. New tips include EV charging, smart device usage, and load shifting.
- The print reports also cross-promoted rebates on new cooling equipment, heating and cooling system tune-ups, the email reports included messaging on Energy Audit, heating and cooling tune-ups, rebates on new air conditioners or heat pumps, EVs, and solar subscription.

Residential and Business
Programmable
Thermostat

The program aligns with the overall diversity of end-use energy service needs and existing technologies by using the cooling end-use for DR purposes. This is appropriate because it is the highest contributor to peak demand in the residential and small C&I sector. This was noted in the PY2016 evaluation report and found to be consistent in PY2017.

- In the future, competition among PT vendors and evolving technological developments could lead to the market shifting from one vendor toward another. Navigant suggests KCP&L monitor the market to avoid missing market trends. The BYOD segment of the RHR population is small. KCP&L could consider expanding the BYOD customer segment through targeted marketing in MEEIA Cycle 3. BYOD programs are comparatively inexpensive to operate and a way that many utilities run thermostat programs successfully.

The program aligns with the overall diversity of end-use energy service needs and existing technologies by using the cooling end-use for DR purposes. This is appropriate because it is the highest contributor to peak demand in the residential and small C&I sector. This was noted in the PY2016 and PY2017 evaluation reports and found to be consistent in PY2018.

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- KCP&L has tested the performance of Tendril's Orchestrated Energy platform, a comparable DR and energy optimization technology that is similar to Nest's RHR and Seasonal Savings. Tendril's offering could expand the pool of eligible participants to customers with other brands of Wi-Fi- connected thermostats.

Income-Eligible
Multifamily

As in PY2016, Navigant found that the program includes appropriate measures for its current targets.

- The program includes the following end-use measures: aerators, low flow showerheads, water pipe insulation, lighting, and smart power strips.
- Common area measures include lighting and an option for custom measures for measures deemed appropriate for that property.

The custom program encompasses all end uses and, therefore, addresses all energy efficiency potential in the target market segment.

Navigant found that the program included appropriate measures for its targets.

- The program installed the following end-use measures in PY2018: faucet aerators, low-flow showerheads, lighting, and smart power strips. Common area measures included lighting and optional custom measures. Implementation staff reported that customers were satisfied with the custom options, especially the custom lighting measures. They reported that the custom lighting measures were frequently implemented because property owners and managers were able to update mismatched lighting in different common areas throughout their properties to consistent, higher quality lighting. Improving common area lighting also helped alleviate the burden on maintenance staff, which implementation staff noted was a challenging role for multifamily properties to fill.

- The custom program track will offer an HVAC tune-up measure in the next program year. Per implementation staff, this measure is needed primarily due to a lack of maintenance personnel available to service existing units, including those located at ground-level and on roofs.

Table 16: Issue 4 - Are the communication channels and delivery mechanisms appropriate for the target market segment?

Program	2017 Summary Response	2018 Summary Response
Business EER - Standard	<p>The IC for the Standard program works one on one with the larger customers. Medium and smaller customers are addressed through the trade-ally network. In addition, there is also targeted marketing for some sectors with historically lower participation. Due to the high level of participation in the Standard program, these channels are appropriate for the target market.</p> <ul style="list-style-type: none"> • KCP&L developed additional channels for communication by creating high quality targeted videos for property managers and special energy conservation coffee for schools and universities. • Of the program participants that participated in the implementer-administered survey, more than 85% of the participants indicated that they participated in the program due to the available rebate and or recommendations from the contractor. This is in line with the low FR found in the PY2016 survey. It also indicates that communications about KCP&L programs is leading to participation in these programs. <p>The program staff has identified that the majority of errors with rebate form submittal is found</p>	<p>The IC for the Standard program works one on one with the larger customers. The trade-ally network addresses medium and smaller customers. In addition, there is also targeted marketing for sectors with historically lower participation such as datacenters and property managers. KCP&L's marketing activities meet the programs needs as evidenced by them exceeding their savings and participation goals.</p> <ul style="list-style-type: none"> • KCP&L developed additional channels for communication by creating high quality targeted videos for property managers and special energy conservation coffee for schools and universities in PY2017. In addition, the implementer hosted sector specific webinars in PY2018 that mostly focused on lighting, since the other C&I programs address other the non-lighting end-uses. • Based on responses from the implementer administered survey, the available rebate influenced the consideration of energy efficiency upgrades most greatly, from PY2016 to PY2018. This is in line with the low FR found in the PY2016 survey. High-energy bills represented the next most influential factor. This reinforces the fact that saving money is the driving force behind implementing energy efficient equipment, either through a reduction in energy bills or a reduction in equipment costs via a rebate.

Program	2017 Summary Response	2018 Summary Response
Business EER - Custom	<p>with new trade allies and has worked on training to reduce these errors.</p> <p>Marketing and outreach in PY2017 refocused and emphasized training and awareness in a few key target market segments over broader sales messaging. KCP&L should continue these efforts as trade allies feel there is still room for improvement in training and support for new customer acquisition.</p> <p>KCP&L created a more targeted marketing campaign for PY2017, based on identified industries with the most potential for new Custom projects. The results of marketing to often take time to materialize, yet the efforts are worthwhile even if results are not immediately seen. Targeting new sectors with awareness and marketing is valuable and important for maintaining high net savings and program staff feel they are seeing responses that will translate into future projects in the pipeline.</p>	<p>The program's efforts to educate and engage trade allies have been effective, but program staff would like more support from Customer Service Managers to better reach Tier 1 customers. Trade allies and customers value consistency in incentive levels and calculation methods.</p> <ul style="list-style-type: none"> • The program relies heavily on trade allies to market to customers. The program's efforts to increase engagement with existing trade allies and recruit new trade allies appear to be working. • Over three-quarters (82%) of surveyed trade allies indicated that they had participated in program webinars and trainings or received educational materials from the program. • 27% of surveyed trade allies have brought a program staff member on a sales call with them, and they describe these joint sales calls as very effective.
Block Bidding	<p>The two participants interviewed for the completed PY2017 Block Bidding projects were unaware that their projects were Block Bidding projects and had never heard of the program before. This was for two reasons—first, large customers often have multiple people in different roles or departments handling separate aspects of energy efficiency projects, and while upper</p>	<p>In PY2018, KCP&L relied heavily on Custom program marketing efforts to increase customer awareness of the Block Bidding program. Customers were then target marketed with one-on-one communications if they showed potential eligibility.</p>

Program	2017 Summary Response	2018 Summary Response
	<p>management may be aware of the Block Bidding program, information is not being disseminated to individual project managers. Second, while KCP&L provides targeted informational trainings and touch points for auction participants throughout the Block Bidding process, it does not provide similar support for Buy Now participants.</p>	<ul style="list-style-type: none"> • Four out of the five projects came through the “Buy Now” path of the Block Bidding program. • Awareness is a barrier, since the Block Bidding program is no longer a stand-alone program. Trade Allies and Self-Direct customers must first know that there is additional funding beyond the Custom and Standard program caps. • PY2018 had more trade ally engagement compared to previous years. This could reflect continuous exposure to the program through trade forums, sales trainings, and monthly newsletters delivered by the implementer.
SEM	<p>KCP&L directly markets the SEM program to its customers through key accounts. This is appropriate, as these accounts prefer a personalized approach in place of a broad-focused marketing effort.</p> <ul style="list-style-type: none"> • Larger energy consumers prefer a personalized approach where the benefits of the program to their specific facility are discussed. <p>KCP&L’s approach for the program successfully recruited 16 participants for PY2017.</p>	<p>KCP&L directly markets the SEM program to its customers through key accounts. This is appropriate, as these accounts prefer a personalized approach in place of a broad-focused marketing effort.</p> <ul style="list-style-type: none"> • Larger energy consumers prefer a personalized approach where the benefits of the program to their specific facility are discussed.
Small Business Lighting	<p>Communication channels and delivery mechanisms are working for the program as- is, though there are opportunities for further improvement.</p> <ul style="list-style-type: none"> • The effective communication channels helped lead to the success of the SBL 	<p>Communication channels and delivery mechanisms are working for the program as- is, though there are opportunities for further improvement.</p> <ul style="list-style-type: none"> • The effective communication channels helped lead to the success of the SBL program, as evidenced by the fact that it surpassed its 3-year

Program	2017 Summary Response	2018 Summary Response
	<p>program as evidenced by the fact that it surpassed its 3-year target in only 2 years. Also, KCP&L clearly communicated the amount of remaining funding on the webpage when the programs started to get close to exhausting funds near the end of PY2017. Finally, the webpage clearly indicated the availability of other programs such as the Standard program if the projects did not meet the SBL eligibility criteria. The implementer reached out to all SBL customers and communicated about the early ending of the program and gave them directions on when they needed to submit projects for inclusion.</p> <p>For the SBL program, KCP&L developed two case studies for targeted marketing, one of a bank and one of a gift boutique. These case studies provide useful information to potential program participants. However, there is no a way to access these case studies directly on the webpage. Increasing the amount of material available online may increase participation if the program starts up again in Cycle 3.</p>	<p>target in a little over 2 years. With the discontinuation of the program in PY2018, the webpage clearly indicated the availability of other programs, such as the Standard program.</p> <ul style="list-style-type: none"> • For the SBL program, KCP&L developed two case studies for targeted marketing, one of a bank and one of a gift boutique. These case studies provide useful information to potential program participants. However, there is no a way to access these case studies directly on the webpage. Increasing the amount of material available online may increase participation if the program starts up again in Cycle 3.
Demand Response Incentive	Although room for improvement exists, KCP&L's product manager has taken great efforts to improve communication channels and ensure delivery mechanisms are appropriate for the DRI program.	KCP&L's product manager has taken great efforts to improve communication channels and ensure delivery mechanisms are appropriate for the DRI program.

Program	2017 Summary Response	2018 Summary Response
	<p>During the PY2017 event season, the product manager found that their email notifications were going to certain customers' spam email folder. The DRI team has ensured their email notifications are going to the appropriate contact at the customer site by asking customers to mark the DRI email account as not spam.</p> <ul style="list-style-type: none"> • Every interaction with a customer becomes an opportunity to cross-promote programs. KCP&L does not partake in blind prospecting when recruiting participants. Instead, KCP&L recruits customers for the DRI program using customer contacts from other energy efficiency programs such as KCP&L's suite of C&I programs. In PY2017, with the introduction of customer propensity modeling by the program implementer, KCP&L expanded the pool of potential participants outside of existing energy efficiency programs. <p>Targeted email marketing was executed in PY2017. High usage customers were identified through CLEAResult's propensity modeling and received emails asking them to inquire about the DRI program. The product manager has a full marketing plan for PY2018 that includes targeted email and direct mail marketing. The marketing plan also includes DR forums in which potential customers and participating customers are invited</p>	<p>Customers in PY2018 have recognized improvements in program communication.</p> <ul style="list-style-type: none"> • The product manager continued to provide phone and email notifications 24 hours and 4 hours before events started in which customers needed to confirm notification receipt. A2A sent these notifications. If A2A did not receive receipt confirmation, the KCP&L product manager asked the energy consultant or CLEAResult to reach out to customers directly. The highest usage customers were often notified of potential events more than 24 hours in advance by their energy consultants. • During the PY2017 event season, the product manager found that their email notifications were going to certain customers' spam email folder. The DRI team has ensured their email notifications are going to the appropriate contact at the customer site by asking customers to mark the DRI email account as not spam. • Every interaction with a customer becomes an opportunity to cross-promote programs. KCP&L does not partake in blind prospecting when recruiting participants. Instead, KCP&L recruits customers for the DRI program using customer contacts from other energy efficiency (EE) programs such as KCP&L's suite of C&I programs. The use of customer propensity modeling by the program implementer expanded the pool of potential participants outside of existing EE programs.

Program	2017 Summary Response	2018 Summary Response
	<p>to a lunch forum to learn about the program. The product manager expects to recruit new participants through the forum.</p>	<ul style="list-style-type: none"> Targeted email marketing was executed in PY2018. High usage customers were identified through CLEAResult's propensity modeling and received marketing materials including email, flyers, personalized marketing packets, individual field visits, and in- person DR forums. The product manager has a full marketing plan for PY2018 that includes targeted email and direct mail marketing. In PY2018, there was also a Tier 1 campaign in which energy consultants' targeted large customers with high curtailment potential. The marketing plan for the Cycle 2 extension will be similar to what was conducted in PY2018, with a heavy focus on individual field visits to recruit new customers quickly.
<p>Whole House Efficiency</p>	<p>Participating customers report a high level of overall satisfaction with the program, with some variations based on the program track in which they participated.</p>	<p>The current means of communication are appropriate, with high levels of customer satisfaction for the program. The implementer suggests that additional direct marketing may be useful.</p> <p>The WHE program has continued to emphasize the synergies that occur when customers participate in multiple program tiers. Customers that have already participated in the program have demonstrated a high level of receptivity and a willingness to engage with KCP&L and with the program implementer.</p>
<p>Home Lighting Rebate</p>	<p>KCP&L-MO and the IC market the program widely through mass media (including the internet) and within retail stores. This strategy matches the current program budget and has</p>	<p>KCP&L-MO and the IC reduced marketing and outreach in PY2018, in keeping with the reduced program scope for the program year. They also decided to delay creation of new point-of- purchase or outreach materials until the KCP&L-MO to Evergy rebranding was complete.</p>

Program	2017 Summary Response	2018 Summary Response
	<p>been suitable to meet sales and savings targets through PY2017.</p> <ul style="list-style-type: none"> The program has met—and sometimes exceeds—sales and savings targets with their current HLR marketing efforts. As described above, these efforts have served to increase sales of program-supported bulbs. <p>Budget constraints advise against revising the marketing efforts for PY2018.</p>	<ul style="list-style-type: none"> The program has met and exceeded the PY2018 sales and savings targets with the reduced level of HLR marketing efforts. Redesigning marketing materials for PY2018 would have wasted valuable ratepayer funds, given the limited scope of the HLR in PY2018 and the in-progress rebranding effort.
<p>Home Energy Report and Income-Eligible Home Energy Report</p>	<p>The HER program uses two primary communication channels: paper mailed reports and emails.</p> <ul style="list-style-type: none"> All treatment customers received four paper reports in PY2017. Customers with email addresses on file (about 19% of the HER program and 17% of the IE-HER program) also received monthly email reports. <p>Customers could also access an online portal to monitor energy use through the Home Online Energy Audit.</p>	<p>The HER program uses two primary communication channels: paper mailed reports and emails.</p> <ul style="list-style-type: none"> All treatment customers received four paper reports in PY2018. Customers with email addresses on file (about 8% of the HER program and 8% of the IE-HER program) also received monthly email reports. Customers could also access an online portal to monitor energy use through the Home Online Energy Audit. The timing and frequency of messaging through these channels is appropriate given the need to provide information through multiple mediums over time so participants can monitor the effect of any efficiency and consumption changes they make.

Program	2017 Summary Response	2018 Summary Response
Residential and Business Programmable Thermostat	<p>KCP&L has successfully reached enrollment targets. In fact, in PY2017, marketing ramped down a bit to reduce new enrollment. Marketing efforts in PY2017 focused on increasing thermostat activation for the Rush Hour Rewards program.</p> <ul style="list-style-type: none"> • As in PY2016, the CLEAResult technicians cross-promoted the Residential PT program with the Whole House Efficiency's (WHE's) Energy Savings Kit program but ceased promotion through HER program mailers in November 2017 due to intended enrollment slowdown. • Other methods of communication have been through social media and participant promotion through peer-to-peer word-of-mouth communication between customers. • Many survey respondents who were dissatisfied with event notification channels requested notification through means that are already available (such as text or push notifications). Navigant recommends re-educating customers on notification channels for the upcoming DR season. <p>Additionally, evaluation surveys revealed that additional education and communication</p>	<p>KCP&L has successfully reached enrollment targets and decreased marketing in PY2018.</p> <ul style="list-style-type: none"> • Communication channels including email, cross-program promotion, social media, and participant promotion through peer-to-peer word-of-mouth have proved successful in meeting enrollment targets.

Program	2017 Summary Response	2018 Summary Response
Income-Eligible Multifamily	<p>regarding program goals and purposes would be useful to customers.</p> <p>Communication channels focus largely on direct outreach and in-person contacts. Several additional communication and outreach channels are used, including leveraging partnerships with the MHDC, USDA, and other organizations involved in low-income housing.</p> <ul style="list-style-type: none"> • Communication channels and delivery are appropriate given the direct interaction with property owners/managers and tenants. • The program also works with MHDC, US Department of Agriculture (USDA), and other organizations to identify potential building owners and/or buildings eligible to participate in the program. <p>Program staff reports that direct outreach has been the most effective method of increasing awareness about the IEMF program.</p>	<p>Communication channels focused largely on direct outreach and in-person contacts with property owners and managers. The program continued to identify opportunities to leverage partnerships with the Missouri Housing Development Corporation (MHDC), United States Department of Agriculture (USDA), and other organizations involved in income-eligible housing.</p> <ul style="list-style-type: none"> • Communication channels and delivery are appropriate given the direct interaction with program participants. The implementer reported that these have been the most effective way to engage property owners and managers. • Program implementation staff reported that getting property owners and managers to attend program events, such as lunch and learn events and appreciation dinners, continued to be a challenge. • The program continued to work with MHDC, USDA, and other organizations to identify opportunities for outreach. For example, the program worked to identify new opportunities where property owners and managers can get together for events such as MHDC low-income housing tax credit application workshops and other workshops.

Table 17: Issue 5 - What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each end-use measure included in the program?

Program	2017 Summary Response	2018 Summary Response
Business EER - Standard	<p>In PY2017, KCP&L continued to have strong success with the efficient lighting measures in the Standard program. The effect from other end uses was less than 1%, but other programs such as the Custom program cover many of those measures.</p> <p>KCP&L has had great success with the lighting rebates. Even after lowering rebate amounts in the fall of 2017, the participation remained strong in the Standard program through the end of the program cycle.</p>	<p>In PY2018, KCP&L continued to have strong success with the efficient lighting measures in the Standard program. The effect from other end uses was less than 1%, but other programs such as the Custom program covers many of those non-lighting measures.</p> <p>KCP&L has had great success with the lighting rebates. Even after lowering rebate amounts in PY2017, the participation remained strong in the Standard program throughout PY2018.</p>

Business EER - Custom

There is opportunity for KCP&L to address the market imperfections identified in the previous questions by leveraging last year's outreach efforts, tailoring the project sales pitch, and providing greater support for trade allies.

Customers' and trade allies' feedback indicated that the rebate amount paid out was not always worth the effort the process required. To address this, as stated in Question 2, KCP&L wants increased emphasis on the non-energy benefits of a project, to sell the solution, not just the incentive. Tailoring the outreach and sales proposition language based on the type of customer and measure will help attract customers for whom the rebate alone is not enough to justify the time or cost of a project. For example, some customers indicated that making their business greener was a factor that would further motivate them to consider EE.

Simplifying the program application process when possible would encourage more customers to complete high efficiency projects, particularly when equipment needs to be specified and installed urgently.

The program has attempted to simplify the application process, but room for improvement remains. Some trade allies indicate that the incentive levels are too low to justify the administrative burden of participating in the program.

- Trade allies indicate that the level of technical expertise required to complete the preapproval process may be causing the program to miss out on significant opportunities. One trade ally stated, "Some customers may not have the resources for the custom program. If you are not an expert in the field/have an engineering team behind you, custom rebate programs are practically impossible."
- KCP&L indicated interest in developing better tools for on-site data collection that trade allies or program outreach staff could use on a tablet to pre-populate the preapproval application. Ensuring that complete and accurate data is provided in the preapproval application should help eliminate situations in which the customer feels that they were told one incentive amount and then received another.

Block Bidding

The Block Bidding program can begin to address some of the challenges encountered in the past years. Better awareness amongst the correct decision-makers will be key to increasing traction, and continuing to fine-tune the eligibility requirements will ensure greater, more successful participation.

KCP&L should seek to better understand the organizational and decision-making structures of its larger customers and identify and generate awareness among those who drive energy efficiency projects.

- This may be a single person, but, as found in this year's participant interviews, is more likely a network of key players whose combined awareness and buy-in to the program is necessary to generate program participation.

KCP&L should continue its customized, one-on-one outreach efforts targeting new Block Bidding customers, but should also apply this individualized approach to current large customers using other rebate programs to understand how they can better utilize the Block Bidding program.

In its third year, the Block Bidding program began to address some of the challenges encountered in the past years. Continuing to fine-tune the eligibility requirements, simplify program incentive design, and marketing of specific use cases will ensure greater, more successful participation.

- Potentially transitioning to an incentive based on demand savings rather than energy savings is seen to some as more transparent and a simplification to the incentive calculation. This is in contrast to PY2018 where the incentive was a range (i.e., \$0.06/kWh to \$0.40/kWh) and the awarded value within that range depended on the coincidence of their demand.
- KCP&L should continue its “long-lead” tariffs to encourage participation from customers whose projects carry across multiple years. This way, customers with large capital improvement projects that span outside the timeline of Cycle 2 can still receive a rebate. Customers should have sufficient support to ensure they meet the extension application deadline to avoid customer frustration.
- KCP&L recognizes the continued need to sell the program value to large customers that previously opted out of KCP&L's rebate programs. Other, more mature markets possess this large customer buy-in and can serve to guide KCP&L as they recruit back these previously underserved customers.

SEM	<p>Three of the seven participants interviewed felt the rebates received do not offset the Energy Efficiency rider making it difficult for the large customers to cost-justify participating in KCP&L's Business Energy Efficiency programs.</p>	<p>There was not an option for existing participants to continue their involvement in the program and the pursuit of energy saving opportunities.</p>
Small Business Lighting	<p>Overall, the SBL program ran successfully but exhausted all funding before the end of the cycle. Moving forward, the implementer and KCP&L could consider changes to future programs so that they can last the entire cycle.</p> <ul style="list-style-type: none"> • Ending a program mid cycle even if it is due to over participation, can be disruptive to customers and trade-allies. It may also be preferable for planning purposes if the program lasts the entire cycle. Navigant provides recommendations below on potential ways to address this issue moving forward: <p>Increase the 3-year program budget o Decrease the incentive levels.</p>	<p>Overall, the SBL program ran successfully but exhausted all funding before the end of the cycle. Moving forward, the implementer and KCP&L could consider changes to future programs so that they can last the entire cycle.</p> <ul style="list-style-type: none"> • Ending a program mid cycle, even if it is due to over participation, can be disruptive to customers and trade allies. It may also be preferable for planning purposes if the program lasts the entire cycle. Navigant provides recommendations on potential ways to address this issue moving forward: <ul style="list-style-type: none"> o Increase the 3-year program budget o Decrease the incentive levels

Demand Response
Incentive

KCP&L has implemented targeted marketing to recruit new customers. In addition, KCP&L has refined curtailment plans and expectations (i.e., the EPD values and FPLs) with current customers.

KCP&L has implemented targeted marketing to recruit new customers. In addition, KCP&L has refined curtailment plans and expectations (i.e., the EPD values and FPLs) with current customers. Looking to Cycle 3, KCP&L is aiming to implement a pay-for-performance incentive model and enroll more automated curtailment customers to increase program impacts.

- As noted in the PY2017 evaluation, measurement, and verification (EM&V) report, KCP&L began recruiting smaller customers in PY2017. KCP&L is updating the EPD and FPL calculation for existing customers for the Cycle 2 extension. CLEAResult will use interval data during potential peak hours during weekdays to identify a more accurate EPD value. During PY2017 and PY2018, KCP&L also redefined contracted CL for many existing customers through thorough onsite visits.

- Changes to the fundamental program design cannot be made until Cycle 3. In preparation for a “pay-for-performance” incentive structure, KCP&L continues to focus on real-time data analysis following each DR event and report back to customers with their findings. This ability to measure customers’ event performance will be crucial in calculating performance incentive payments in the program design under consideration for Cycle 3.

Whole House Efficiency	<p>Based on the participant survey, one of the most common suggested improvements was advertising the WHE program more so that more customers could benefit from it. This reflects the overall high level of program satisfaction. Some participants specifically mentioned television and radio advertising as an effective way to reach other customers like them.</p>	<p>The main driver for customer participation is their understanding of the cost-to-value ratio. There are not too many barriers beyond first cost, and one of the most important skills is to be able to communicate non-energy benefits.</p>
Home Lighting Rebate	<p>Navigant verified that the KCP&L-MO HLR program has achieved 93% of reported savings and 75% of its MEEIA Cycle 2 net savings targets cumulatively over PY2016 and PY2017.</p> <ul style="list-style-type: none"> • Given strong realization rates and progress toward net savings goals, the HLR program has shown great success in increasing consumer acceptance and implementation of ENERGY STAR-qualified LED bulbs. 	<p>Navigant verified that the KCP&L-MO HLR program has achieved 102% of reported savings and 95% of its MEEIA Cycle 2 net savings targets cumulatively between PY2016 and PY2018.</p> <ul style="list-style-type: none"> • Given strong realization rates and progress toward net savings goals, the HLR program has shown great success in increasing consumer acceptance and implementation of ENERGY STAR-qualified LED bulbs.

Home Energy Report and Income-Eligible Home Energy Report

Most treatment customers read or look at the report, and many talk about the report with others. However, there may be an opportunity to engage the 29% of customers who either did not recall the report or did not look at the report.

- Of CET survey respondents, 29% either did not recall receiving the report or did not read the report.
- Of CET respondents who recalled the reports, 72% like the reports and 61% talk to other people about the reports.

Based on responses to the evaluation survey, customers are most likely to recall the neighbor comparison (92%) and then energy-saving tips (62%) but give higher ratings to the tips (7.1 on a 10-point scale) compared to the neighbor comparison (6.2).

Most treatment customers read or look at the report, and many talk about the report with others. Readership rates are consistent with Oracle-reported utility averages. However, there may be an opportunity to engage the 6% of customers who either did not read the report or the 22% who did not recall receiving the report at all.

- Of CET respondents, 6% who recalled receiving the reports did not read or did not remember reading the report; 22% of all CET respondents did not recall receiving the report at all. Of CET respondents who recalled the reports, 77% like the reports and 57% talk to other people about the reports.

Residential and Business Programmable Thermostat

KCP&L is close to reaching enrollment goals for Cycle 2; thus, it is redirecting efforts from enrollment to continuing thermostat activation and designing a process to handle thermostat participants that move out of their home.

- As noted in the PY2016 findings, KCP&L emphasized RHR activation in PY2017 and will continue this effort in PY2018.

KCP&L has reached enrollment goals for Cycle 2 but will resume customer acquisition efforts to meet the new enrollment targets set for the Cycle 2 extension.

- KCP&L is developing a customer-facing portal to increase program understanding and participation.
 - KCP&L is required to call five RHR events in the summer of 2019. This requirement provides the opportunity to test DR impacts under a variety of conditions.
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Income-Eligible
Multifamily

As noted in PY2016, multifamily is a difficult segment to target in most jurisdictions. However, the program has taken steps to overcome these difficulties, including new outreach/targeting strategies and the addition of the custom program path during PY2016; these steps have opened up energy efficiency opportunities for customers interested in end uses beyond the standard measures offered in the IEMF program.

- The first custom measures installed in the IEMF program occurred during PY2017 and included an air sealing measure.

Program staff reports that they would like to prioritize the custom program path during PY2018 to drive greater participation in custom measures.

The custom track saw substantial growth during PY2018, up from fewer than 10 custom measures during PY2017.

- A program change occurred between PY 2017 and PY2018 wherein common area lighting became included within the custom program track. According to the program implementer, the program incentives (28 cents/kwh) for these projects are used as a marketing tool by contractors in instances where there is a strong possibility of the project being little to no cost to the property. The incentives are also promoted to property managers and owners with targeted outreach, including via case studies, postcards, and newsletters.

Implementation staff estimates that approximately 85% of all custom lighting projects were fully covered by program incentives. The remaining 15% were typically project scenarios with a high ratio of exterior lights but little common area 24-hour lighting (for example, a garden-style apartment complex with few interior hallways) where the incentive covered the majority of the project cost. Implementation staff also noted that there were projects where the 28-cents/kwh incentive paid for more than the total cost of the project. In those instances, the implementer adjusted the incentive downward so that it matched the payment for the project.
