

Colorado, 2019 Program Year

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DISCLAIMER

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¹ On October 11, 2019, Guidehouse LLP completed its previously announced acquisition of Navigant Consulting, Inc. In the months ahead, we will be working to integrate the Guidehouse and Navigant businesses. In furtherance of that effort, we recently renamed Navigant Consulting Inc. as Guidehouse, Inc.

Peak Partner Rewards 2019 Evaluation Report

EXECUTIVE SUMMARY

Xcel Energy's Peak Partner Rewards (PPR) program is offered to all business customers in Colorado that agree to reduce their energy usage by a minimum of 25 kW when demand response (DR) events are called in the summer months. Participants earn a reservation incentive for agreeing to curtail their load and a performance incentive for their actual energy reduced during an event. In this report, Navigant, a Guidehouse company, documents its independent evaluation of the PPR program. The evaluation addressed program processes only; it did not address load impacts, except to the extent that process elements such as recruitment, participant attrition, and nonparticipation during events affect kilowatt load reduction capability.

Methodology

The purpose of this evaluation was to assess current PPR program performance and provide Xcel Energy with actionable suggestions for program improvements. Through discussions with Xcel Energy staff, the evaluation team originally identified the following six primary research objectives: event performance, participant satisfaction, recruitment, attrition, real-time data, and incentives. Navigant also includes the DR Automation research objective in the report because there are valuable findings resulting from the research conducted.

The evaluation included the following activities:

- 1. Conducting staff interviews to inform research planning and scope refinement
- 2. Defining primary and secondary research objectives
- 3. Conducting the following research activities:
 - a. Ten in-depth end-of-season participant interviews
 - b. Ten in-depth nonparticipant interviews
 - c. Six peer utility program benchmarking
- 4. Developing key findings related to defined research objectives
- 5. Providing suggestions for program improvement

Navigant sought feedback and collaboration with Xcel Energy at each step throughout the evaluation.

Key Findings

Evaluation findings suggest that participants are overall highly satisfied with the program, with the greatest opportunities for program improvements in customer engagement. Participants expressed the need for multiple touch points and would like to see more of a partnership from Xcel Energy, including proactive communication from the account manager. While the primary driver for program participation is reduction in energy costs for most participants, some participants are primarily driven by corporate sustainability and environmental savings objectives. Operational constraints and customer load characteristics are the biggest perceived barriers toward program participation.

Most nonparticipants lack detailed program information to make an enrollment decision and would like to receive this information from account managers and revisit participation possibilities. Nonparticipants with centrally controlled sites indicated lack of ability to undertake automated curtailment in PPR as a participation barrier. Participants were unfamiliar/unaware of portal



functionalities, would like to be reminded to view event performance on the portal, and would also like the portal to include incentive information.

Table 1 summarizes the key findings from the participant and nonparticipant interview findings and benchmarking with peer utility programs by research objective.

Table 1. Key Findings

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Research Objectives	Key Findings
Event Performance	 Customers often lack knowledge or information to develop curtailment plans and would like to review curtailment plans with account managers. Participants expressed the need for greater engagement and multiple touch points to review event performance and incentives earned, and revisit nomination amounts. Participants expressed a need to receive end-of-season performance reports that summarized their performance and the incentives earned through their participation in the season. Some customers indicated preference for a longer notification period (dayahead, day-of in the morning) or event alerts.
Participant Satisfaction	 Participants reported high satisfaction with the overall program, with an average score of 7.7 out of 10.0. Participants also indicated high satisfaction with control events (average score of 7.4). Participants indicated relatively lower levels of satisfaction with customer support, with an average score of 6.4.
Recruitment	 Financial benefits are the primary drivers for program participation. Some participants also mentioned corporate sustainability and saving the environment as primary drivers. Benchmarking findings suggest that providing customers with a savings estimation tool during program outreach and recruitment helps convey the program's value proposition and get buy-in from internal stakeholders. Benchmarked utilities use various channels for program marketing and customer outreach; successful strategies include publishing case studies by industry verticals in local business journals, providing marketing kits to customers to get internal stakeholder buy-in, and using case studies by industry verticals to promote program awareness by account managers.
Attrition	 A majority of the nonparticipants are unfamiliar with the PPR program and lack the detailed program information necessary to make an enrollment decision. An uncertain value proposition from DR program participation led some customers to discontinue participation once the EnerNOC program ended. Customers perceive operational constraints to be the biggest barrier toward program participation. Benchmarking findings suggest that frequent event calling affected attrition.



Research Objectives	Key Findings
Real-Time Data	 Even though most participants were aware of the program portal, they either accessed it infrequently or not at all; participants would like touch points from Xcel Energy, reminding them to access the portal. Customers lack awareness on existing portal functionalities (viewing energy use trends, historical program performance) and would like the ability to view incentive information on the portal. Benchmarking findings indicate that system integration within the utility across different platforms provided by separate parties (e.g., DRMS provider, program implementer, EMS provider) is an important consideration; setting up a system integration roadmap and conducting multiple tests is essential during various stages of setting up these systems to ensure interoperability.
Incentives	 Some participants do not get to view the bill credit and lack incentive information. Participants have insufficient understanding of incentive calculations. Benchmarking findings suggest that customers like flexible program design with varying incentive levels and are more willing to enroll in such programs than those with fixed parameters and incentive levels.
DR Automation	 Automated curtailment can help attract certain business types to enroll in PPR (participants with multiple sites controlled from a central location such as grocery, big box retail, and schools). Automated curtailment facilitates participation of medium-sized commercial facilities. Benchmarking findings suggest that automated curtailment can be used to control multiple packaged rooftop units in medium-sized commercial facilities.

Source: Navigant

Suggestions for Program Improvements

Navigant's suggestions for program improvements draw on the program findings presented above and are organized into four broad themes: **customer engagement**, **program tools**, **portal enhancements**, and **automated curtailment options**. Appendix C presents the level of cost and Xcel Energy staff time/effort that may be needed to undertake these improvements with additional descriptions of each suggestion.

- **Customer Engagement:** Establish multiple touch points and develop a partnership with program participants. Engage additional program outreach with nonparticipants and include green corporate citizenship in program outreach.
- Program Tools: Provide multiple program tools to participants to establish a value proposition and develop customized program collateral by business type, using the program portal for customer engagement. Develop end-of season performance scorecards with performance metrics.
- **Portal Enhancements:** Include incentive information on the portal and orient/educate customers on existing functionalities to drive frequent customer usage of the portal.
- Automated Curtailment Options: Offer automated curtailment options to attract specific segments and use lessons learned from other utility automated curtailment experiences.



1. BACKGROUND, OBJECTIVES, AND METHODOLOGY

This section outlines the methodologies Navigant employed to evaluate the Peak Partner Rewards (PPR) program. The purpose of the evaluation was to assess current PPR program performance and provide Xcel Energy with suggestions for program rules and process modifications. Through discussion with Xcel Energy staff, the evaluation team identified the following seven priority topics: event performance, participant satisfaction, recruitment, attrition, real-time data, incentives, and DR automation.

Figure 1 outlines the research process for the evaluation.

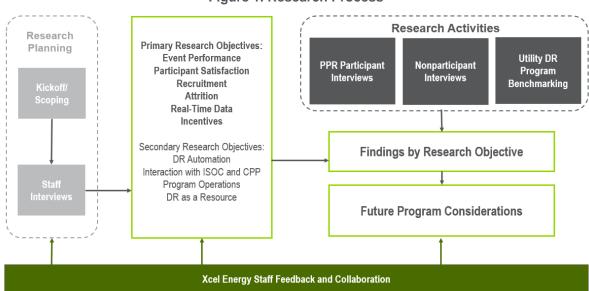


Figure 1. Research Process

Source: Navigant

This graphic represents the original prioritization of research objectives. In executing and discussing the research, Navigant and Xcel Energy subsequently chose to include "DR Automation" under primary research objectives and included the evaluation findings on DR Automation in the report.

Table 2 summarizes the number of participant and nonparticipant in-depth interviews conducted as part of the evaluation activities and shows the number of customers in the former EnerNOC-offered program for both groups.

Table 2. Summary of Participant and Nonparticipant Interviews

Group	Former EnerNOC Program Participants	Non-EnerNOC Customers	Total
PPR Participants Interviewed	9	1	10
PPR Nonparticipants Interviewed	6	4	10

Source: Navigant



As part of the benchmarking activity, Navigant reviewed six peer utility programs similar to Xcel Energy's PPR program.² The benchmarking included in-depth interviews with program managers at these peer utilities and secondary research, including a review of program materials.

Table 3 lists the utility and program names included in the benchmarking. Appendix B summarizes the high level findings and best practices from the peer benchmarking activity.

Table 3. List of Utilities and Programs Included in Benchmarking

Peer Utility	Program Name
Public Service Company of New Mexico (PNM)	Peak Saver
NV Energy	PowerShift Commercial DR
Duke Energy Progress	Demand Response Automation
Pacific Northwest Utility ³	DR Program
Tucson Electric Power	Smart Demand Response
Austin Energy ⁴	Load Cooperative Program

Source: Navigant

² Xcel Energy and Navigant jointly selected the six programs for benchmarking. These programs were selected based on similar climatic conditions for the utilities and similar markets (regulated) in which these utilities operated. The selected programs also represent a range of program sizes and a mix of internally and third-party-administered programs.

³ Confidentiality maintained per utility's request.

⁴ Navigant only conducted secondary research/review of the program—the evaluation team was not able to conduct an in-depth interview for the program.

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2. FINDINGS

This section summarizes key findings from participant and nonparticipant interviews and program benchmarking. These findings are organized by research topic to provide a holistic discussion of research results. Appendix B summarizes the benchmarking findings, which constituted an interim deliverable to Xcel Energy during the evaluation.

2.1 Event Performance

Xcel Energy would like to understand what process improvements might help participants meet their contracted load amount and improve their event performance in PPR. The evaluation research findings in this area are summarized below.

- Lack of information/knowledge to develop curtailment plans: Participant interview
 findings suggest that customers often lack the knowledge or information necessary to develop
 curtailment plans and determine the nominated capacity, which poses event performance
 uncertainties and challenges. A majority of interviewed participants would like to review
 curtailment plans with account managers.
- Review of event performance, incentives, and nomination adjustments: Participants expressed the need for greater engagement and multiple touch points with account managers to review event performance and incentives earned, and revisit nomination amounts. For some participants, facility personnel undertaking curtailment did not receive or view bills and consequently lacked visibility into how their actions translated into incentives received. These participants indicated a strong preference to view the incentive amount. Even participants that viewed their bill credits lacked understanding on the relationship between curtailed load and incentives received. Most participants would like to review their performance with the account manager and revisit their nomination amount for any adjustments. These participants lacked information and feedback on actual curtailed load in regard to nomination, and how that tied to the incentives received. A few indicated that they would like assistance from Xcel Energy to revisit nomination amounts. Overall, participants indicated a need for greater engagement and partnership from Xcel Energy.

Benchmarking findings suggest that establishing regular touch points to maintain customer engagement is a critical success factor (e.g., one utility includes DR program performance in a customer's annual business plan review). Account managers are responsible for these touch points in internally administered programs. In programs that outsource implementation services, implementation contractors are primarily responsible for these touch points, in close coordination with account managers and the DR program team.

- End-of-season performance reports and scorecards: Participants expressed a need to
 receive end-of-season performance reports that summarized their performance and the
 incentives earned through their participation in the season. Other utilities have successfully
 deployed this approach to convey program performance information through an end-ofseason performance report. Such tools help establish value proposition for DR program
 participation and help get internal stakeholder buy-in and upper management support for
 continuing participation.
- Preference for longer notification or event alerts: Some customers indicated preference
 for a longer notification period (day-ahead, day-of in the morning) or event alerts.
 Benchmarking findings suggest that some utilities provide advanced alerts to the customer
 (one day to a few days in advance) on possible events occurring based on the weather
 forecast; customers found this helpful for planning operations in advance.

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2.2 Participant Satisfaction

The PPR program is new and participant satisfaction is relatively unknown. Navigant examined participant satisfaction through its research activities and summarized the findings below.

- **High satisfaction with overall program and control events:** Participants reported high satisfaction levels with the overall program, with an average score of 7.7 out of 10.0. They also indicated high satisfaction with control events (average score 7.4).
- Relatively lower satisfaction with level of customer support: Participant interview findings suggest a relatively lower level of satisfaction with customer support, with an average score of 6.4; this score indicates the need for greater customer engagement.

2.3 Recruitment

PPR program recruitment has been below expectations; therefore, Xcel Energy sought to understand drivers for participation and ways to improve recruitment. The key findings from the evaluation research are summarized below.

- Financial benefits are the primary drivers for program participation: Most participants cited program incentives and reduced energy costs as primary drivers for participation. Some participants (four out of 10) mentioned corporate sustainability and saving the environment as primary drivers. These participants, who cited corporate sustainability and environmental drivers, belonged to the following industry verticals arts/entertainment/recreation (two respondents), beverage manufacturing (one respondent), and finance/insurance (one respondent).
- Tool to aid recruitment and program enrollment: Benchmarking findings suggest that providing customers with a savings estimation tool during program outreach and recruitment helps convey the program value proposition and get buy-in from internal stakeholders. This could be a simple spreadsheet-based tool for doing "what-if" analysis, which allows customers to calculate incentives under different scenarios with variations in program parameters and nomination amount. The tool could also be built to allow a benefits comparison across multiple program types and rates applicable to a customer, helping customers choose the best-fit option. In some of the programs reviewed under benchmarking, account managers and implementation contractors familiarized customers with such tools, in coordination with the DR program team.
- Benchmarked utilities used various channels for program marketing: Benchmarking
 findings suggest that successful program marketing and outreach strategies include case
 studies of program participants in local business journals that provide recognition to these
 participants and help promote the program within similar business types; case studies by
 industry verticals that account managers can use to market the program to prospective
 participants; and internal marketing kits to help customers increase program awareness
 across different departments within the company and get stakeholder buy-in for program
 participation.

2.4 Attrition

The PPR program has not had as much uptake as expected, and a majority of the EnerNOC program participants did not join PPR. Navigant explored the reasons for attrition in the PPR program, the findings of which are summarized below.

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- Most nonparticipants lack program details: Nonparticipant interview findings suggest that
 the majority of nonparticipants are unfamiliar with the PPR program and lack the detailed
 program information necessary to make an enrollment decision. These customers are
 interested in getting program details from their account managers to assess participation
 possibilities. Some nonparticipants would like help from Xcel Energy in identifying appropriate
 loads and developing curtailment plans or strategies.
- Uncertain value proposition led to discontinuation in DR program participation:
 Nonparticipant interview findings suggest that some customers are unsure of the value proposition from DR program participation and did not enroll in PPR after the EnerNOC program ended because of this. However, these customers expressed interest in reassessing participation possibilities if the value proposition is established, suggesting that they could be open to considering participation in PPR if they were convinced of the value.
- Operational difficulties and load characteristics restrict program participation: Participant interview findings suggest that customers perceived operational constraints as the biggest barrier toward program participation. Nonparticipant interview findings suggest that some of the prior EnerNOC program participants chose not to enroll in PPR after the EnerNOC-administered program ended due to operational difficulties experienced during program participation and perceived effect on equipment. A few of the prior EnerNOC customers experienced difficulties in executing automated curtailment due to control signals not reaching equipment and chose to discontinue participation in a DR program when the prior program ended. Some nonparticipants that were not in the EnerNOC program indicated they did not have sufficient load available for curtailment because their baseline demand was already low due to energy efficiency improvements /or the facility peak did not fall within the PPR event window.
- Benchmarking findings suggest that frequent event calling affected attrition: Three of the six benchmarked programs specified limitations on event frequency. Frequency limits help minimize customer attrition due to fatigue. In one of the benchmarked programs, frequent event calling led to significant customer attrition (calling events for more than 3 days in a row led to around 7% attrition). Two benchmarked utilities limit frequency to three consecutive day events, while another utility specifies a maximum of two events per week. PPR does not specify any frequency limitations, so this could be an area of future consideration.

2.5 Real-Time Data

PPR participants receive real-time energy information through the PPR program portal. Xcel Energy sought to understand the value of this information to customers and whether any process improvements were necessary to convey this value. The key findings on this research area are summarized below.

Participants access program portal infrequently and need to be reminded to access portal: Participant interview findings suggest that even though most participants are aware of the program portal, they either accessed it infrequently or not at all. Participants indicated that they did not have time or did not remember to log into the portal. They would like to be reminded to do so. A few participants mentioned that regular customer touch points initiated frequent portal usage in the EnerNOC program, which was beneficial. (An EnerNOC representative would review the portal data with the participant after events, review performance information on the portal, and analyze whether any operational changes were needed to improve event response.)

Benchmarking findings also suggest that customer portals for viewing energy usage and DR event performance (both current and historical) are valued by participants when they access the information. However, few customers proactively log on to the portal, emphasizing the



need for user-friendly portals and customer touch points that remind customers to access the portal after events. A joint review of event performance information on the portal and a touch point to address any questions/concerns they might have on their performance would be beneficial for customers.

- Customers lack awareness on portal functionalities: Participant interview findings suggest that participants would like to view energy use trends, historical performance, and incentives and compare nomination versus curtailment to assess whether nomination adjustments are needed. The portal does offer the ability to view energy use trends and historical performance information. However, participant interview findings suggest that none of the participants were aware of the ability to view energy use trends and historical program performance, indicating a lack of awareness on portal functionalities.
- Customers indicated preference to view incentives on the portal: Participant interview findings suggest that customers who do not see the bill credit have no idea on how much in incentives they received and how that tied to the amount of load curtailed. They would like to view the incentive information on the portal and understand how the incentive calculations were tied to program performance. Benchmarking findings indicate that participants like to be able to view incentives on the portal for programs that offered that feature.
- Benchmarking findings suggest the importance of system integration and interoperability: Systems integration and interoperability across different platforms can be challenging, especially when multiple parties are involved (e.g., technology provision and implementation services outsourced to different vendors). Other utilities benefited by developing a systems integration roadmap and interoperability tests across multiple platforms at various stages of rollout of multiple systems. System integration and interoperability would be important to consider if PPR were to incorporate automated curtailment systems/technologies and implementation contractor's platform in future.

2.6 Incentives

Xcel Energy sought to better understand customers' perception of the PPR incentive; the findings are summarized below.

- Some participants do not view the bill credit and lack incentive information: Participant
 interview findings indicate that, for some facilities, the person interviewed by Navigant and
 undertaking the curtailment did not receive the bills or view the PPR program participation bill
 credit. These interviewees expressed a need to be able to view the incentives received from
 PPR program participation.
- Participants have insufficient understanding of incentive calculations: Participant interview findings indicate that most participants would like to better understand the incentive calculations and how the amount of load curtailed translated into the amount of incentives received. Benchmarking findings suggest that one of the peer utilities trained account managers on the baseline methodology and the incentive calculations so that they were able to explain the incentive calculations to the customers and address any questions customers might have; having trained account managers was effective in addressing any customer questions or concerns related to calculated incentives.
- Benchmarking findings suggest that variations in incentive levels with flexible program
 design appeal to customers: Utilities with flexible program design including multiple options
 on key program parameters (e.g., event notification, event duration, and event timeframes)

⁵ Conversations with Xcel Energy's PPR program team indicated that depending on when customers are viewing the information, there might be up to 40 days lag in the data.



can vary incentive levels to customers based on the combination of chosen options. Customers are able to choose the combination that suits their business requirements and provides maximum benefit. Participants value this flexibility and are more willing to enroll in such programs than those with fixed parameters and incentive levels.

2.7 DR Automation

This research area sought to investigate whether it would be beneficial for PPR to incorporate an automated curtailment option in future. The findings on this topic are summarized below.

- Automated curtailment helps attract certain business types to enroll in PPR:
 Nonparticipant interview findings suggest that former EnerNOC program participants with multiple sites controlled from a central location (e.g., grocery, big box retail, schools, property management, food and non-food retail) could consider PPR program enrollment if the automated curtailment option was available. These customers are unable to enroll in PPR given the absence of an automated curtailment option.
- Automated curtailment facilitates participation of medium-sized commercial facilities: Benchmarking findings suggest that automated curtailment can be used to control multiple packaged rooftop units in medium-sized commercial facilities. In NV Energy's PowerShift program, small/medium customers were controlled using Pelican thermostats and Encycle's Demand Limiting Controllers; large commercial and industrial (C&I) customers (with minimum 50 kW aggregated load) had either an OpenADR-compliant gateway provided by Universal Devices or used their own OpenADR client to execute automated control strategies. NV Energy stressed the importance of offering a menu of enabling technology options for customers to select depending on their business type and the end-use load characteristics. Customers valued having additional control and information available through the use of tools and technologies that a DR program might offer, which motivated them to enroll in the program.

3. CONSIDERATIONS FOR PROGRAM IMPROVEMENTS

This section summarizes Navigant's suggestions for PPR program improvements, drawing on the program findings presented in Section 2. Table 4 lists the program improvement considerations by four themes: customer engagement, program tools, portal enhancements, and automated curtailment options. Appendix C includes additional information about these considerations.

Table 4. Summary of Considerations for Program Improvements

Topic	Initiative		
	 Establish multiple touch points with individual participants to promote greater customer engagement (assumes the account manager is primarily responsible for managed accounts or Business Solutions Center representative is primarily responsible for non-managed accounts and works in close coordination with PPR program staff). 		
Customer Engagement	 Engage in additional program outreach to nonparticipants and provide program details to help facilitate the enrollment decision-making process by customers (assumes the account manager is primarily responsible for managed accounts or Business Solutions Center representative is primarily responsible for non-managed accounts). 		
	 Develop customized program collaterals with green/corporate citizenship messaging, specifically targeted toward segments (e.g., public institutions, schools/colleges/universities) that are driven by these purposes. Develop case studies with customer testimonials within specific segments. 		
Program Tools	 Provide customers with multiple tools to help establish the value proposition. Consider reviewing Xcel Energy's existing Excel-based tool for customer use at the enrollment stage to aid in decision-making and consider appropriate modifications or enhancements to provide the tool to customers (tool exists but may require enhancements to make it customer- ready). 		
	 Leverage PPR program portal to engage customers (described under "Portal Enhancements" below). 		
	 Develop post-season performance scorecards with analytics on program performance (assumes this is outsourced to third-party); follow other utility examples from program benchmarking (e.g., Austin Energy). 		



Торіс	Initiative
	 Consider adding incentive information to the portal and educate customers on portal features and functionalities.
Portal Enhancements	 Establish regular touch points directing customers to the portal; provide post-event communication to the customer (possibly by email) directing them to the portal to view their performance. Communicate periodically with customers, reminding them to view portal information. Account managers or an implementation contractor could engage with them to jointly review the portal information and address any questions or concerns.
Automotod	 Incorporate automated curtailment strategies into the PPR program offer to attract customer segments with multiple sites that are centrally controlled (schools, groceries, big box retail). Prior EnerNOC program participants from these segments are not enrolled in PPR. They may consider enrolling in the program if automated curtailment options were available.
Automated Curtailment	 Use lessons learned from other peer utilities' automated curtailment experiences (NV Energy and Austin Energy). Xcel Energy could consider providing a menu of automated curtailment technology choices to its customers, depending on the type of equipment and control technology at the customer facility. The company can leverage other utility experiences on how customers could be educated and guided on deployment of automated curtailment strategies.

Source: Navigant



APPENDIX A. DETAILED RESEARCH OBJECTIVES

Table A-1 lists the research objectives and the questions from the Research Objectives Memo provided to Xcel Energy to consider for this evaluation. These research questions were further informed and refined through staff interviews, with Xcel Energy and Navigant agreeing on topics 1-6 listed below as the primary research objectives for the evaluation. In executing and discussing the research, Navigant subsequently included "DR Automation" (item #7 below) under primary research objectives as there were valuable findings on the topic from the evaluation research. More detail on the objectives associated with approved research activities can be found in Table A-2, Table A-3, and Table A-4.

Table A-1. PPR Program Research Topics and Potential Research Questions

Research Objectives	PPR Program Context	Research Questions
1. Event Performance	Participants are not performing to expected levels.	 How did the enrolled participants select their load curtailment nominations? Do participants know how to measure their performance? What actions are participants taking to meet their contracted load curtailment? What other information would help customers meet their contracted load curtailment? Do end users—i.e., employees and customers—need additional or different messaging during events?
2. Participant Satisfaction	Program is new and participant satisfaction is relatively unknown.	 What portion of participants are satisfied with the program overall? What portion of participants are satisfied with the control events? How do participants feel about the length and frequency of control events? What could Xcel do to increase participant satisfaction?
3. Recruitment	Program recruitment has been below expectations.	 How can Xcel Energy increase enrollment? How can Xcel Energy recruit customers through other channels outside of account managers? What other types of customers should Xcel Energy target for the program and what are their characteristics? Who are the decision makers? Is there more than one decision maker during the recruitment process, and how do their needs and priorities differ from each other? What do these customers value and what marketing messages are likely to be most successful? How can this program be appealing to customers that are not heavy industrial loads?
4. Attrition	Only 20% of EnerNOC customers stayed in PPR.	 Why did many of the previous EnerNOC program participants not opt in to PPR? What was EnerNOC's incentive structure, and how does it compare to the PPR incentives?



Research Objectives	PPR Program Context	Research Questions
5. Real-Time Data	PPR participants receive real-time energy information through the program.	 How much of a value add is the real-time energy information to customers? Which segments of customers are most interested in the real-time energy information? How can this be marketed most effectively? Have participants perceived the implementation challenges that Xcel Energy has faced with the Remote Terminal Units (RTUs)?
6. Incentives	PPR participants receive a higher energy incentive relative to the capacity incentive.	 Are the current incentives appropriate? How would participants react to an increased incentive? Would it improve enrollment or performance? How do Xcel Energy's incentives compare to other similar programs and what can be learned from them?
7. DR Automation	No participants are using automation for their event response.	 Would automation increase the response rate and performance of participants? Do customers have the capability for automated response? If not, what would be required? Would automated response be feasible with Xcel Energy's Demand Response Management System (DRMS)? Would automation be cost-effective? Are there opportunities for bundling it with energy efficiency to enhance cost-effectiveness?
8. Interaction with ISOC and CPP	PPR is designed to fill a niche between ISOC and CPP.	 Are ISOC and CPP limiting the enrollments in PPR? Do customers understand the differences between the programs? How does a customer decide which program is right for them? In what ways can the programs work together more effectively?
9. Program Operations	PPR is cost- effective.	 What is the cost-effectiveness ratio, once the new implementer is participating? How could the program's operations or incentives be changed to (more) cost-effectively meet participant needs?
10. DR as a Resource	Xcel Energy anticipates increasing the proportion of intermittent resources in its portfolio and pursuing use of DR for targeted locations.	 How can PPR be used as a tool for managing energy supply in the future? What program changes would need to be made? What would the implications on existing participants be? How are other utilities controlling their DR programs and what are the event triggers they use (e.g., systemwide vs. localized capacity constraints)? How is DR an opportunity for customer engagement? How can it be used to deepen the existing relationship between the energy consumer and utility?

Source: Navigant



A.1 Peer Benchmarking Research Objectives

The peer benchmarking task focused on the research objectives outlined in Table A-2.

Table A-2. Peer Benchmarking Research Objectives

Peer Benchmarking Research Objectives

Program Objectives/Drivers: Determine key elements of program design including age of program, incentive levels, number of participants, average number of events, and use of automation.

Program Enrollment: Understand customer eligibility to enroll in the program.

Program Parameters: Assess event notifications as well as event duration and frequency and how these factors affect the customer experience.

Program Administration: Examine program administration from other utilities and the role of account managers as well as third parties.

Program Marketing and Customer Recruitment: Investigate successful program marketing approaches, recruitment, and customer demographics.

Technology and Systems: Investigate the various types of technologies used by other utilities

Program Incentives: Understand the program incentives offered, customer satisfaction with the incentives, and the administration of program incentives.

Lessons Learned: Understand critical lesson from other utilities.

Source: Navigant

A.2 Participant Interviews

Navigant conducted participant interviews to examine five research objectives, described below.

Table A-3. Participant Interview Research Objectives

Participant Interview Research Objectives

Program Enrollment and Participation: Understand the customer enrollment process and experience with the program.

Event Performance and Load Curtailment: Understand the customer load curtailment plan as well as challenges and successes with their event performance.

Portal Experience: Investigate the customer's experience with Xcel Energy's online portal.

Customer Support: Understand the level of support customers receive and if the level of support meets their expectations.

Overall Satisfaction: Collect customer feedback and satisfaction with aspects of the program.

Source: Navigant

A.3 Nonparticipant Interviews

Navigant conducted nonparticipant interviews with two different groups: previous EnerNOC participants and non-EnerNOC participants that do not participate in the PPR program. The research objectives are described below.

Table A-4. Nonparticipant Interview Research Objectives

Nonparticipant (EnerNOC) Interview Research Objectives

Familiarity with PPR: Determine if nonparticipants are familiar with PPR, and if so, how much they know about the program.



Program Awareness: Determine if nonparticipants are familiar with PPR; understand how nonparticipants learned about PPR; understand nonparticipant experience with account managers; determine what part of PPR would be attractive to nonparticipants.

Barriers to Participation: Understand why nonparticipants are not enrolling in PPR.

Improvements: Understand what improvements to PPR would attract nonparticipants to the program.

Source: Navigant



APPENDIX B. INTERIM DELIVERABLE: BENCHMARKING SUMMARY OF C&I CURTAILMENT PROGRAMS

Navigant reviewed six peer utility programs similar to Xcel Energy's Peak Partner Rewards (PPR) program and conducted in-depth interviews with program managers at the utilities. This document summarizes the findings and best practices from these programs. Navigant categorized findings from the interviews and secondary research into key topic areas, which are described below.

B.1 Program Objectives/Drivers

- Primary objectives for benchmarked programs are for summer or winter peak reductions; a
 few utilities used demand response (DR) to fulfill operating reserve requirements (spinning
 reserves) in programs with short notification periods (10 minutes or less) in addition to
 meeting peak requirements.
- Secondary objectives include using DR to address system emergencies and for customer engagement/relationship building.
- Five of the six benchmarked utilities use DR for meeting resource needs. Only one utility indicated that it maintains the program to fulfill regulatory needs and not from a resource requirement standpoint.
- Two of the six benchmarked utilities indicated possibility for considering use of the benchmarked DR program for non-wires alternatives (NWAs) in the future.

B.2 Eligibility for Program Enrollment

Customer eligibility definitions for program participation varied across the six benchmarked programs:

- Two of the six benchmarked utilities define eligibility in terms of customer demand, where one
 utility requires that commercial and industrial (C&I) customers have a maximum demand
 greater than 50 kW.
- One utility program requires individually metered customer sites to provide a minimum of 75 kW of curtailable load.

B.3 Program Parameters

B.3.1 Event Notification

- Minimum notification period in four of the six benchmarked programs ranges from 10 minutes
 to 1 hour. However, these programs typically provide advanced alerts (one day to a few days
 in advance) on the possibility of events occurring based on the weather forecast.
- One utility provides multiple notification choices (10-minute, 4-hour, 18-hour) at the time of enrollment. This flexibility allows diverse business/industry types to enroll.
- Automated response (Auto-DR) enhances customers' ability to respond to events with a relatively short notification period.

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B.3.2 Maximum Event Duration

- Longer event duration (typically greater than 4 hours) can restrict commercial customer
 participation without allowance on backup generator operations. Industrials with batch
 processes that can be shut/shifted are better suited for such events.
- In four of the six benchmarked programs, maximum event duration ranged from 24 hours.

B.3.3 Event Frequency

Three of the six programs specified limitations on event frequency. Frequency limits help
minimize customer attrition due to fatigue. In one of the benchmarked programs, frequent
event calling led to significant customer attrition (calling events for more than 3 days in a row
led to around 7% attrition).

B.4 Program Administration

- The primary reason for outsourcing program implementation was lack of internal resources, especially as the program scaled up.
- Reasons cited for internally administering the program include the utility's overall culture
 driving the need for direct engagement with the customer and relatively lower costs for
 internal program administration vis-à-vis outsourced program administration costs.
- Vendor contracts for technology provision need to clearly specify terms for equipment ownership (installed at customer sites to enable DR) at the end of the contract period.

B.5 Program Marketing and Customer Recruitment

- All benchmarked utilities agree that the customer account manager can and should play a key role in program outreach and recruitment.
- Sharing case studies on DR program participation, especially within the same business type, is an effective outreach method for customer enrollment.
- Customer decision-making for program enrollment is greatly facilitated by providing decision-making tools to the customer at the time of enrollment; these tools estimate savings from program participation using conditions/parameters and assumed levels of curtailment as inputs.
- Establishing regular touch points to maintain customer engagement is a critical success factor (e.g., including DR program performance in customer annual business plan review, providing end-of-season performance scorecards). Account managers are responsible for these touch points in internally administered programs. In programs that outsource services, contractors are primarily responsible for these touch points, in close coordination with account managers.
- Benchmarked utilities with internally administered programs face challenges in recruiting
 midsized customers (customers without account managers) due to insufficient internal
 resources to undertake recruitment for these customers. Hiring outside agencies (e.g.,
 employment agency) can be challenging due to lack of skilled staff from these agencies.

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B.6 Technologies and Systems

- Systems integration and interoperability across multiple platforms can be challenging, especially when multiple parties are involved (e.g., technology provision and implementation services outsourced to different vendors). Developing a roadmap during program inception and conducting multiple integration tests under different stages of the program to ensure interoperability is essential to address these challenges.
- Customer portals for viewing energy usage and DR event performance (both current and historical) are valued by participants. However, few customers proactively log into the portal, emphasizing the need for user-friendly portals along with customer touch points.
- Programs use a combination of manual and automated curtailment strategies. Industrial
 customers primarily use manual curtailment. Commercial customers with centrally managed
 controls (e.g., big box retail, schools) primarily engage in automated curtailment strategies.

B.7 Program Incentives

- Most programs reviewed offer incentives for contracted capacity (\$/kW basis) plus energy payment (\$/kWh) based on actual load reduced during an event.
- Flexible programs with multiple choices vary incentive levels by the type of options customers choose for event notification, event duration, and event timeframes.
- Two utilities offer separate upfront incentives for technology enablement to help offset the initial set up costs for the customer (lower participation barriers) in addition to program participation incentives.

B.8 Lessons Learned/Best Practices

- Develop flexible program designs, with choices on key program parameters, to attract enrollment from diverse business/industry types with varying requirements.
- Vendor contracts need to incorporate clear definitions on customer baselines to measure impacts and settlement.
- Tools that establish the value proposition to the customer for participating aid both customer decision-making and enrollment.
- Building customer relationships and maintaining regular touch points through the entire course of program participation is essential for program success.
- Ensuring system integration and interoperability across multiple systems is critical.



APPENDIX C. DESCRIPTIONS OF SUGGESTIONS FOR PROGRAM IMPROVEMENTS

The following tables summarize Navigant's suggestions for program improvement and indicates for each initiative the estimated level of staff time and effort required for operationalizing these initiatives.

Table C-1. Initiatives with Cost and Staff Time/Effort Estimates

Topic	Initiative	Cost ¹	Staff Time/Effort ²
	Establish multiple touch points with individual participants to promote greater customer engagement (assumes the account manager is primarily responsible for managed accounts or Business Solutions Center representative is primarily responsible for non-managed accounts and works in close coordination with PPR program staff).	\$\$	111
Customer Engagement	Engage in additional program outreach to nonparticipants and provide program details to help facilitate the enrollment decision-making process by customers (assumes the account manager is primarily responsible for managed accounts or Business Solutions Center representative is primarily responsible for non- managed accounts).	\$	• •
	 Develop customized program collaterals with green/corporate citizenship messaging, specifically targeted toward segments that are driven by these purposes. Develop case studies with customer testimonials within specific segments. 	\$	• •
Program Tools	Review Xcel Energy's existing Excel-based tool for customer use at the enrollment stage to aid in decision-making. Consider appropriate modifications/enhancements to provide the tool to customers (tool exists but may require enhancements to make it customer-ready).	\$	•
	 Develop post-season performance scorecards with analytics on program performance (assumes this is outsourced to third-party). Follow other utility examples from program benchmarking (Austin Energy). 	\$\$	11
	 Consider adding incentive information to the portal. Educate customers on portal features and functionalities. 	\$\$	† †
Portal Enhancements	 Provide post-event communication to the customer (possibly by email), directing them to the portal to view their performance. Communicate periodically with customers, reminding them to view portal information. 	\$	•



Source: Navigant

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Торіс	Initiative _		Cost ¹	Staff Time/Effort ²
	 Incorporate automathe PPR program of 	ated curtailment strategies in ffer.	\$\$\$	+ + +
Automated Curtailment	Use lessons learned from peer utilities' automated curtailment experiences and consider providing a menu of automated curtailment technology choices to customers. *\$\$		111	
¹ Cost Estimate		² Staff Time/Effort Estimate		
\$ = Little or no financial outlay required		= Minimal effort required	= Minimal effort required	
\$ \$ = Modest expenditure		†	• • = Moderate time commitment	
\$\$\$ = Major investment			† † † = Significant impact on staff responsibilities	

These considerations are further described below.

C.1 Customer Engagement

- Establish multiple touch points with program participants at different stages (e.g., enrollment, post-event, and end-of-season communication) to convey a sense of partnership with Xcel Energy. Participant and nonparticipant interview findings suggest that customers would like periodic communication and engagement with Xcel Energy. Benchmarking with peer utility programs suggests that building customer relationships and maintaining regular touch points through the entire course of program participation is essential for program success.⁶
- Engage in additional program outreach with nonparticipants and provide program details
 to help facilitate enrollment decision-making process by customers. Nonparticipant interview
 findings suggest that some customers lacked sufficient program details to make an enrollment
 decision.
- Develop customized program collaterals by business type (e.g., case studies, public recognition in local business media, internal marketing kits). Benchmarking findings suggest that developing case studies with customer testimonials by business type can strongly influence program recruitment. Include green corporate citizenship in PPR program outreach. Participant interview findings suggest that attaining corporate sustainability objectives and helping the environment were primary drivers for program participation for some participants (i.e., four out of 10 participants interviewed as part of this evaluation). Customer segments such as public institutions and schools/universities are primarily motivated by nonfinancial objectives to enroll in demand side management programs (energy efficiency and DR), which is corroborated by benchmarking findings from peer utility programs. Therefore, Xcel Energy could consider developing customized program collaterals for such segments, highlighting how PPR participation could help attain corporate citizenship goals and fulfill environmental objectives.

C.2 Program Tools

• Provide multiple tools to help establish program value proposition, particularly a savings estimation tool during initial outreach. The PPR program team could review and revisit the

⁶ Account managers are responsible for these touch points in internally administered programs. In programs that outsource services, implementation contractors are primarily responsible for these touch points, in close coordination with account managers and DR program team.



tool used by account managers and modify it to be customer-ready (with the expectation that the customer is provided the tool during initial outreach so they could analyze how much in incentives they could possibly earn under different curtailment levels). Benchmarking findings suggest that customers find simple spreadsheet-based tools for "what-if" analysis helpful to establish the value proposition from program participation and get internal buy-in and upper management support to enroll in the program.

- **Use the PPR program portal** to engage customers (further described below under Portal Enhancements).
- Develop end-of-season performance scorecards with individual customer analytics and performance metrics. Appendix D provides a performance scorecard example from Austin Energy that Xcel Energy could consider reviewing and using as a template for a PPR program performance scorecard. Benchmarking findings suggest that Austin Energy's program has gained a high level of customer engagement through administering these scorecards. In fact, customers in Austin Energy's program have used the scorecard metrics to identify operations issues (e.g., a large grocery chain used the scorecard to identify communication issues at specific stores; a discount retailer used scorecard analytics to identify HVAC maintenance issues).⁷

C.3 Portal Enhancements

- Include incentive information in portal and orient/educate customers on portal functionalities, including viewing information on energy use trends and historical event performance. This would help address participant needs to obtain and view incentive information, especially for participants where the facility person undertaking the curtailment did not get to view the bill credit (received by a different department within the organization).
- Establish regular touch points directing customers to the portal to review current and
 historical program performance, revisit nominated amount and adjust if needed based on
 program performance. The Xcel Energy DR program team could consider sending an email to
 customers, after an event, directing them to the portal to review their performance. This would
 help address the challenge associated with customers not remembering to log into the portal.
 Additionally, the PPR team could undertake periodic review of program performance
 information on the portal with participants to review nomination amounts, address questions
 or concerns related to their participation, and explain how incentives are calculated.

C.4 Automated Curtailment Option

- Consider offering automated curtailment option to attract customer segments with
 multiple sites that are centrally controlled (schools, groceries, big box retail). Prior EnerNOC
 program participants from these segments are not enrolled in PPR because multiple sites that
 are controlled centrally. Incorporating automated curtailment option could motivate these
 customers to enroll in PPR.
- Use lessons learned from other utility automated curtailment experiences. Xcel Energy
 could consider providing a menu of automated curtailment technology choices to its
 customers; these choices could depend on the type of equipment and control technology at
 the customer facility. For example, automated curtailment of packaged rooftop units in
 medium commercial facilities would require different technology than those for a large
 commercial facility with a building management system; the vendors and technology

⁷ Smart Analytics for Commercial & Industrial Demand Response"; Presented at the 40th PLMA conference by Austin Energy; available at https://www.peakload.org/assets/40thConf/10.Holmes%20&%20Jarman%20-%20Smart%20Analytics%20for%20C&I%20DR.pdf



providers would also be different. The PPR program team could review automation options provided by other utilities, such as NV Energy and Austin Energy (described in the benchmarking findings). This could be especially be useful if Xcel Energy seeks to expand the PPR program offer to midsized commercial facilities, where manual curtailment possibilities are low. NV Energy offers a portfolio of automated curtailment options for small, medium, and large commercial customers; the PPR program team could glean insights from that experience. The PPR program team could also draw on Austin Energy's experience on how customers could be educated and guided on deployment of automated curtailment strategies.^{8,9}

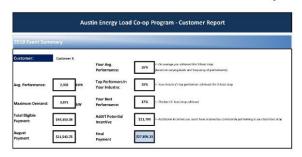
⁸ Austin Energy prominently markets the Auto-DR component and provides the customer with a separate Auto-DR technical guide that explains the system architecture and functionalities, directs customers to the database of OpenADR-certified products, provides examples of DR strategies that could be automated, and lists OpenADR products that are tested by Austin Energy to guide customer choice of ADR-enabling technologies.⁸

⁹ Austin Energy's Automated Demand Response technical guide is available at: https://austinenergy.com/wcm/connect/48413f11-d704-43fb-be8e-31c663c1a88d/automatedDemandResponseTechnicalGuide.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWO RKSPACE-48413f11-d704-43fb-be8e-31c663c1a88d-mKk4Ggp



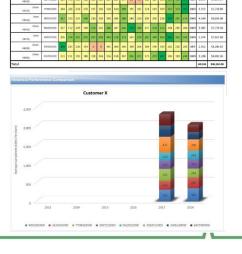
APPENDIX D. PERFORMANCE SCORECARD EXAMPLE FROM AUSTIN ENERGY'S LOAD COOPERATIVE PROGRAM¹⁰

Individual Customer Analysis Example: Score Cards



Score Card Metrics:

- Customer Average Performance (kWh)
- •Customer Maximum Demand (kW)
- •Customer Average Performance %
- •Industry Best Performance %
- •Customer Best Performance
- Additional Incentive Customer Could have Earned





Case Study: Customer Sore Cards

Color coding of the customer event performance can highlight performance issues

The column with the tan color in every cell indicate that all customer sites failed to perform during the event on 8/15

During the customer follow up it was found that the recipient of the customer event notifications was on vacation that day





^{10 &}quot;Smart Analytics for Commercial & Industrial Demand Response," Presented at the 40th PLMA conference by Austin Energy; available at https://www.peakload.org/assets/40thConf/10.Holmes%20&%20Jarman%20-%20Smart%20Analytics%20for%20C&l%20DR.pdf

Peak Partner Rewards Evaluation

2019 Program Evaluation: Recommendations and Responses

The Xcel Energy Peak Partner Rewards ("PPR") product in Colorado is offered to all business customers that agree to reduce their energy usage by a minimum of 25 kW when demand response events are called in the summer months. Participants earn a reservation incentive for agreeing to curtail their load and a performance incentive for their actual energy reduced during an event.

Xcel Energy ("the Company") engaged a team of researchers led by Navigant (now known as Guidehouse) to conduct a process evaluation of the Peak Partner Rewards product. The evaluation team completed activities to understand the following research objectives as part of that evaluation:

- Participant event performance (qualitative only) and awareness
- Participant satisfaction with the product
- Prospect recruitment
- Participant attrition
- Participant access to and engagement with real-time data and program portal
- Product incentives and participant awareness
- Automated curtailment options

The assessment was conducted via interviews with employees and customers as well as a peer benchmarking review. Based on the results of this research, the evaluation team developed key findings and recommendations for Xcel Energy.

Re	commendation	Response
1)	Establish multiple touch points	The Company is developing a touchpoint strategy to
	with individual participants to	determine the most effective communications and
	promote greater customer	timing for those communications to keep program
	engagement (assumes the	participants engaged and educated.
	account manager is primarily	
	responsible for managed	
	accounts or Business Solutions	
	Center representative is	
	primarily responsible for non-	
	managed accounts and works in	
	close coordination with PPR	
	program staff).	
2)	Engage in additional program	The Company has increased its outreach efforts to
	outreach to nonparticipants and	nonparticipants via the Account Management and BSC
	provide program details to help	groups.
	facilitate the enrollment	
	decision-making process by	
	customers (assumes the account	
	manager is primarily responsible	
	for managed accounts or	
	Business Solutions Center	
	representative is primarily	
	responsible for non-managed	
	accounts).	

3)	Develop customized program	The Company has developed a case study with a
	collaterals with green/corporate	current program participant to use as program
	citizenship messaging,	collateral. The Company also plans to engage with its
	specifically targeted toward	Corporate Communications organization to develop
	segments (e.g., public	more targeted marketing collaterals focused on
	institutions,	various value propositions and customer segments.
	schools/colleges/universities)	
	that are driven by these	
	purposes. Develop case studies	
	with customer testimonials	
	within specific segments.	
4)	Provide customers with multiple	The Company continues to leverage the existing Excel-
,	tools to help establish the value	based tool in a manual fashion for each prospect and
	proposition. Consider reviewing	continues to have direct conversations with all
	Xcel Energy's existing Excel-	customers considering PPR to cover all possible
	based tool for customer use at	benefits. However, the Company agrees that
	the enrollment stage to aid in	improvements can be made to better express the
	decision-making and consider	value propositions to prospects as well as the tools
	appropriate modifications or	used today. Xcel Energy is currently evaluating and
	enhancements to provide the	developing options for improving these tools.
	tool to customers (tool exists	
	but may require enhancements	
	to make it customer-ready).	
5)	Leverage PPR program portal to	The Company plans to pursue portal enhancements
	engage customers (described	when possible. Xcel Energy migrated PPR customers
	under "Portal Enhancements"	onto its Yukon platform in early 2020 and performed a
	below).	significant system upgrade for Yukon during this same
		time period. Future efforts will focus on portal
		enhancements such those recommended in the
		evaluation.
6)	Develop post-season	The Company has continued developing post-season
	performance scorecards with	reports for program participants, although this is
	analytics on program	currently a manual and time-intensive process. The
	performance (assumes this is	Company agrees that this is an important touchpoint
	outsourced to third-party);	for program participants and is evaluating possibilities
	follow other utility examples	to improve the process, the timing for delivery, and
	from program benchmarking	the final scorecard content shared with customers.
	(e.g., Austin Energy).	
7)	Consider adding incentive	The Company plans to pursue these recommendations
	information to the portal and	when possible. Xcel Energy migrated PPR customers
	educate customers on portal	onto its Yukon platform in early 2020 and performed a
	features and functionalities.	significant system upgrade for Yukon during this same
		time period. Future efforts will focus on portal
		enhancements such as these recommendations.
8)	Establish regular touch points	The Company agrees with this recommendation and is
		incorporating these points into its touch point strategy
1	directing customers to the	incorporating these points into its touchpoint strategy
	portal; provide post-event	contingent on enhancements that add capabilities
	portal ; provide post-event communication to the customer	
	portal; provide post-event	contingent on enhancements that add capabilities

performance. Communicate periodically with customers, reminding them to view portal information. Account managers or an implementation contractor could engage with them to jointly review the portal information and address any questions or concerns.

9) Incorporate automated curtailment strategies into the PPR program offer to attract customer segments with multiple sites that are centrally controlled (schools, groceries, big box retail). Prior EnerNOC program participants from these segments are not enrolled in PPR. They may consider enrolling in the program if automated curtailment options were available.

The Company will take this recommendation into consideration during each program cycle when evaluating possible changes and improvements to the PPR program design. The Company acknowledges that offering an automated curtailment option would likely appeal to a segment of customers who would not otherwise participate in PPR. The Company is approaching this cautiously as automated curtailment strategies that take physical control of customer loads are complex and sensitive processes that require significant time to develop and implement and would increase program costs.

10) Use lessons learned from other peer utilities' automated curtailment experiences (NV Energy and Austin Energy). Xcel Energy could consider providing a menu of automated curtailment technology choices to its customers, depending on the type of equipment and control technology at the customer facility. The company can leverage other utility experiences on how customers could be educated and guided on deployment of automated curtailment strategies.

The Company agrees with this recommendation and will include lessons learned from peer utilities as it evaluates the automated curtailment design option.