



Staff Report Item 13

TO: East Bay Community Energy Board of Directors
FROM: Taj Ait-Laoussine, Vice President of Technology and Analytics
SUBJECT: Demand Response Pilot Review
DATE: January 16, 2019

Recommendation

Accept staff review of the Demand Response Pilot.

Background

On May 16, 2018, the EBCE Board of Directors approved the implementation of a pilot demand response program targeting a subset of commercial and industrial customers. The proposed pilot was designed to mirror PG&E's *Peak Day Pricing (PDP)* program, which is only available to bundled customers. The pilot program was expected to provide several benefits, including:

- **Customer Retention** - By offering customers an option similar to that available to bundled PG&E customers, EBCE could remain competitive with PG&E and offer customers the opportunity to realize the same potential bill benefits with EBCE.
- **Demand Response Benefit** - By continuing to provide customers the demand response signal through event day notification, the program would ensure that EBCE receives more of the demand response benefit than a simple bill protection mechanism with no demand reduction incentive (as offered by other CCAs).
- **Direct Experience in Demand Response Programs** - The pilot was expected to generate valuable experience in implementing a demand response program. This could facilitate the future roll out of other programs that are more specifically tailored to the needs of Alameda County and EBCE.

Following approval from the board, EBCE proceeded with implementing the program over the summer. As proposed, the program was only offered to E19 and E20 customers. Eight service agreements were enrolled. The results of the pilot are presented here.

Implementation Review

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Customer Enrollment

Upon approval from the Board, EBCE contacted all eligible customers by a letter describing the program offering. The EBCE website was expanded to include a page describing the program as well as an enrollment form. EBCE also conducted a webinar and proactively contacted customers who had expressed a past interest in the program. With the program start date set to 6/1/2018, there was very little time to actively enroll customers, but in the end, eight service agreements were signed up, and all customers that expressed a concern about the lack of availability of an offering like PG&E's PDP program were given an opportunity to enroll.

Event Notification

EBCE established and tested an infrastructure and the associated processes to generate event notifications for program participants via email and text messages. Participants were invited to join the notification lists and were given an opportunity to opt out of either or both channels.

EBCE also established a process to scan and monitor PG&E systems to identify when a PG&E PDP event was called. In addition, EBCE worked with PG&E staff to receive direct email notification of events whenever possible.

EBCE called eight events during the season, in June and July. EBCE mirrored the PG&E event schedule with the exception of one event, when the PG&E notification did not arrive within the acceptable lead time for EBCE due to a weekend. PG&E did not call any events in August, September or October, and nor did EBCE.

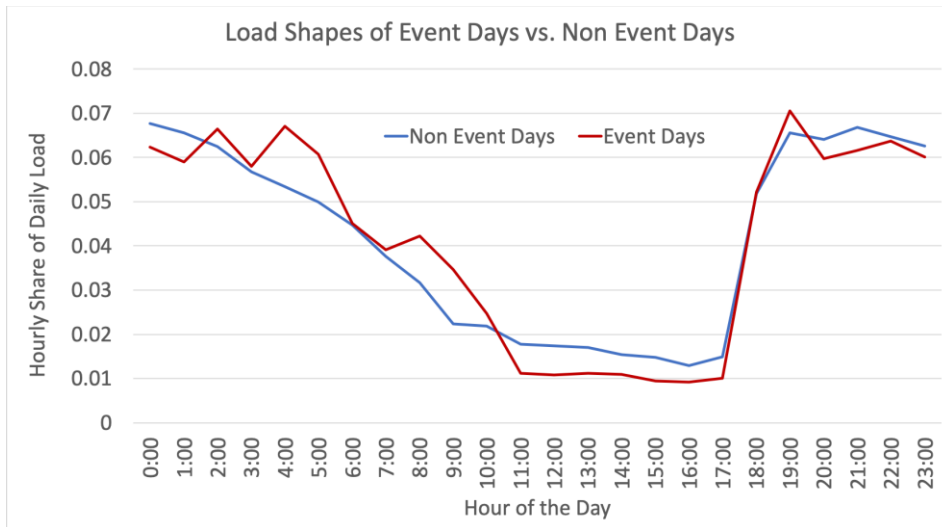
There were no customer issues or complaints associated with event notification.

Load Impact Evaluation

EBCE ensured that it collected interval data for all participating customers and used that data to compare the load of event days to non-event days. While staff cannot present aggregated load data due to the low number of participating customers, it has calculated relative load shapes of event days vs. non-event days.

The data, presented below, shows a distinct reduction in the load during event periods (from 2pm to 6pm) on event days as compared to non-event days, suggesting that participants responded to the event notifications and adjusted their load. Please note that the underlying data is dominated by a few very large customers, hence the unusual nature of the load shape.

While the data here is purely anecdotal given the small number of participants, it seems to indicate an intentional change in operations on event days vs. non-event days. Participants tended to use more ahead of event hours and recover partially after the event ended.



Customer Impact Evaluation

EBCE used the interval data, as well as billing data, to calculate both the credits due to each customer as well as the surcharges to be imposed during event days.

Overall, every customer that participated in the program ended up receiving a net credit; the total credits issued amounted to \$100,817.30. Preliminary guidance in May 2018 indicated that the overall impact of the program would be the issuance of credits on the order \$200K to \$450K.

On the one hand, EBCE ended up issuing a smaller credit amount than expected due to low program enrollment numbers, and a shortened season (EBCE ran the program from June through October, rather than May through October). On the other hand, 2018 was an unusual year in that PG&E (and therefore EBCE) did not call the maximum of 15 events over the season. Therefore, customers incurred less penalties, resulting in larger than expected net credits for all participants. Also, the eight participating customers included some of the largest customers in the EBCE service territory, and therefore garnered larger than average credits.

Customers were contacted in December 2018 and were given an opportunity to receive their credits in the form of a check or a bill adjustment. Most customers chose to receive checks. There was no additional cost to EBCE to calculate and issue credits or checks. Checks and credits will be issued to customers in January 2019.

Summary, Lessons Learned and Next Steps

Overall, EBCE was able to successfully conduct its first demand response program, and benefitted in several ways:

- **Customer Retention:** based on customer feedback, the pilot option was instrumental in ensuring that some customers elected to remain with EBCE. In addition, one top 20 customer not only remained with EBCE, but also decided to opt up to Brilliant 100 as a result of the program offering. Finally, EBCE expects the program to strengthen customer loyalty and trust, since all participants are receiving a credit for their participation (often in the form of a check).
- **Peak Load Reduction:** the data shows that the program resulted in a relative reduction in load during event hours on event days, indicating that participants were responding to the demand response signal. An analysis of market clearing prices shows that several of these event hours had abnormally high prices (due to high demand), so the program also helped reduce EBCE's exposure to procurement risk. Had EBCE gone the route of other CCAs and guaranteed bill protection without a demand response signal, it would not have expected to see a reduction in expected demand during event hours.
- **Experience:** EBCE gained considerable experience in the process and infrastructure requirements associated with planning and executing a demand response program, including valuable lessons learned as documented below. EBCE also issued out a survey to participants to better understand their experience and garner feedback.

Lessons Learned

As EBCE considers the expansion of its demand response offering, it will benefit from having learned the following lessons through the implementation of this pilot program:

- **Data Complexity** - there was significant overhead associated with ensuring the proper compilation of all of the necessary data required to calculate credits and penalties. EBCE will consider using different methodologies for calculating these credits and penalties in future programs to reduce complexity and ensure scalability.
- **PG&E Mirroring** - EBCE decided to run this pilot program by mirroring the PG&E offering, including the selection of event days. In the case of the pilot, this resulted in less event days being called, as well as event days being called that may not have been appropriate for the EBCE service territory. EBCE will consider calling event days based on input from our load procurement positions and load forecasts, rather than relying on PG&E notifications.
- **Customer Response** - while participants as a group responded to notifications - as indicated in the load shape data presented above - not all customers appeared to have responded with the same intensity or consistency. EBCE will consider other notification, communication, incentive and penalty mechanisms to seek greater and more consistent response from participants.

Next Steps

EBCE will take the lessons learned in deploying and implementing this demand response pilot program to formulate the next generation of EBCE demand response offerings, in conjunction with the goals and objectives of the Local Development Business Plan.