BTM Battery for Load Management Study

1. Overview

This study evaluates how behind the meter (BTM) residential battery system can be used to provide value to the customers and the grid when the battery is optimizing under different dynamic rates (e.g. TOU and real-time pricing (RTP)[1]) and DR events. The study will focus on two groups of customers: customers with an existing battery and customers purchasing a new battery.

PG&E will have collected data that informs the below program enhancement goals:

- Determine how best to leverage battery storage technologies for TOU, DR, RTP, load following, and load shaping.
- Increase number of customers with DER technologies participating in DR programs
- Reliable load reduction: ability to deliver the amount of load reduction that is promised
- Meaningful load reduction: identify when and how DERs can provide value to the grid in DR programs
- Speed of response: measuring the speed of distributed battery storage response.
- Load building capability: the ability to increase minimum load and thus decrease ramping capacity needs and increase hosting capacity
- How to remove significant barriers for battery storage aggregators and their customers to use DER technologies when participating in DR programs
- How to ensure DR programs remain cost effective with these enhancements

This study will collect data, such as customer load performance and effectiveness of different algorithms during 2021 and 2022, to inform optimal program design for aggregators and customers with a BTM battery, which could then inform future DR funding applications.

2. Collaboration

The DRET team is collaborating with the internal Distributed Generation and Pricing Products team to implement this study. PG&E hired one consultant to manage the implementation and Evaluation, Measurement and Verification (EM&V) for this DRET study, and another consultant for TOU, DR and RTP signals dispatch.

3. Results/Status

PG&E completed the scope for the study and contracted with one battery manufacturer and two energy platform implementers for the study. The study

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[1] RTP as represented by the CAISO IFM Day Ahead LMP PGAE DLAP price

also developed a customer participation agreement and websites for customer recruitment. As of September 2022, the DRET study recruited 110 customers to participate in the study.

4. Next Steps

The study completed customers recruitment and will continue to send TOU, DR and RTP[1] signals to customers' battery until the end of October. The M&E consultant will start to develop the final report on November 2022.

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[1] RTP as represented by the CAISO IFM Day Ahead LMP PGAE DLAP price