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 realtime pricing (RTP)[1]) and DR events. The study will focus on two groups of customers, customer with existing battery and customer purchasing a new battery.

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

- Determine how best to leverage battery storage technologies forTOU, DR, RTP, load following, and load shaping.
- Increase number of customers with DER technologies participatingin DR programs
- Reliable load reduction: ability to deliver the amount of loadreduction that is promised
- Meaningful load reduction: identify when and how DERs canprovide value to the grid in DR programs
- Speed of response: measuring the speed of distributed batterystorage response.
- Load building capability: the ability to increase minimum load andthus 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 inDR programs
- Cost-effectiveness: DR Programs remain cost effective with theseenhancements

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

2. Collaboration

The DRET team will collaborate with the internal Distributed Generation and Pricing Product team to implement this study. PG&E is planning to hire one consultant to manage the implementation and Evaluation, Measurement and Verification (EM&V) for this DRET study, and anotherconsultant for TOU, DR and RTP signals dispatch.

3. Results/Status

During the second and third quarter of 2021, PG&E completed the scope for the study and contracted with one battery manufacturer and two energyplatform implementers for the study. The study also developed a customerparticipation agreement and websites for

customer recruitment.

4. Next Steps

The implementer will work with the battery manufacturer and energy platform implementers to start recruiting customers. The goal is to recruit100 customers for each manufacturer. The study will start sending TOU, DR and RTP signals to customers' battery when the study reaches its recruitment goal.

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