Develop a residential ADR incentive for EV Charging Controls

1. Overview

In 2019, the Automated Demand Response (ADR) Program conducted a Collaborative Stakeholder Process to identify and vet emerging residential ADR technologies for potential inclusion in the program. This process found that EV charging control (such as onsite charging station, or manufacturer's telematic) were an excellent fit for the ADR program, based on the rigorous criteria and stakeholder process employed in the study. However, surveys with the vendors and their respective control technologies indicate that they were not ready for full-scale rollouts at the time for various reasons.

In order to develop a residential ADR incentive for EV charging controls, this study will test EV charging controls in a field setting and measure the DR impact of such technologies. The study will:

- Identify relevant eligibility criteria for EV charging controls' participation in the field test, and more broadly, in PG&E DR programs.
- Identify EV charging controls and assess their DR impact in a field test.
- Characterize, to the extent possible, the average load management potential for identified residential EVs in PG&E territory:
    - Characterize load management groups of PG&E EV owners based on their EV's, TOU rates, and charging habits.
    - Document existing DR incentives available through PG&E programs (e.g., Smart Rate, Demand Response Auction Mechanism (DRAM) and Capacity Bidding Program (CBP)) to inform how the residential ADR program fits into the DR landscape and how ADR incentives for EV ADR controls should apply to these different DR programs.
- Assess potential ADR incentive designs and amounts for residential EV charging control technologies.

2. Collaboration

The DRET team collaborated with the internal EV team to implement this study. PG&E hired the same consultant that leads the ADR Collaborative Stakeholder Process to manage this DRET study.

3. Results/Status

Below are high level study results:

- Vehicle telematics and EV charger controls are both effective strategies for curtailing EV charging during DR events with minimal impact on participants

- EV ADR charging controls technology holds promise for mitigating overnight peaks

- The maximum resource from managing charging with no export potential for EV ADR control technologies is 9 MW to 13 MW during the peak period from 4:00 p.m. to 9:00 p.m. for the current population of 366,000 EV owners in PG&E service territory

- In alignment with the resource potential findings, almost half of PG&E EV owners regularly charge overnight and would be good targets for new type of EV DR programs that target this time period.

- EV ADR incentives should focus on customers who already own Level 2 chargers

4. Next Steps

This assessment ended on March 2022. PG&E is finalizing the report and it will be posted at the ETCC website in the 2nd quarter of 2022.