

Electric Vehicle (EV) Charging Impact Study

1. Overview

This study is being conducted to test the real-world impact of Electric Vehicle (EV) charging on a commercial office building located in the SDG&E service territory.

A three-month summer/fall study will examine the impact of introducing EV level 2 charging on a 57,000 sq. ft. commercial office building. The site is equipped with a 90 kW (AC) solar PV system, a 30 kW / 40 kWh Battery Energy Storage (BES), and four level 2 charging stations (8 ports).

The overriding goal of this study is to identify and quantify solar over-generation mitigation as a benefit of interconnected workplace EV charging. The results should provide insight into the potential for mass EV adoptions ability to achieve this goal.

Below are some of the key questions that could be examined in the study:

- Can EV charging help mitigate the impact of solar over-generation on the grid?
- Can a BES system be utilized to help flatten the usage curves, and is daytime EV charging counterproductive to shifting of demand?
- What charging utilization threshold must be achieved to demonstrate reasonable impact, and how long does it take from launch to achieve this level of usage?
- Is workplace charging cost effective for site hosts?
- What impact will EV charging have on solar sizing for a facility?
- Are current tariff structures amenable to the promotion of EV charging and load shifting?

2. Collaboration

The progress and results will be shared with other CA IOUs ET-DR Leads. SDG&E's ET Team is also collaborating with its Demand Response Program and Clean Transportation team on this study.

3. Status

The vendor has begun collecting and analyzing data. The project is being extended thru Q4 2021 due to reduced EV charging as a result of COVID-19

business closures started in mid-March 2020.

4. Next Steps

The study of EV charging events will continue thru Q3 or Q4 2021. The data analysis and final report are expected to be complete by Q4 2021.