



OPPORTUNITY

Pacific Gas and Electric Company (PG&E) is a leader in advancing state-of-the-art grid edge technologies that improve the reliability and cost-effectiveness of the grid. PG&E has partnered with Tesla and SolarCity to demonstrate how a portfolio of residential customer-sited smart inverters and batteries can provide measurable grid benefits, enabling a modernized energy grid.

SOLUTION

PG&E is leveraging SolarCity-deployed smart inverters and residential batteries to provide grid services that include voltage and reactive power support and dynamic capacity. PG&E has identified target feeders for the project, across which Tesla, through SolarCity, is installing up to 750 kW of residential rooftop solar photovoltaics (PV) paired with smart inverters and over 100 Tesla Powerwall batteries. Utilizing this portfolio, SolarCity is providing PG&E with real-time visibility into grid edge conditions and customized control over the portfolio.

Together, PG&E, Tesla, and SolarCity are demonstrating how distributed energy resources (DER) such as smart inverters and behind-the-meter battery storage can be coordinated by the utility to optimize electric distribution planning and operations.

APPLICATION

Over 100 residential PG&E customers in San Jose, California are receiving new smart inverters and home batteries for program participation. As the nation's largest residential and commercial solar provider with over 10 years of experience, SolarCity is able to leverage its experienced sales team to engage, educate, and enroll new residential customers interested in the program. In addition to acquiring new customers, SolarCity is also engaging existing eligible customers with the opportunity to participate and benefit from the new inverter systems. Throughout this process,

Customer

Pacific Gas & Electric

Location

San Jose, CA



Project size

100+ Powerwalls
330 kW
640 kWh

Applications

Dynamic capacity,
voltage and reactive
power support,
backup power

Commissioned

2016-2017

ensuring the highest quality customer experience remains one of the top priorities and key competencies for Tesla, SolarCity, and PG&E.

PG&E's distributed energy resource management system (DERMS) can communicate directly with SolarCity's software platform for the aggregation, control and monitoring of DERs. This integration enables PG&E to have end-to-end control over participating DERs in order to monitor the DER aggregation and dispatch it when the grid needs it most.

Tesla and SolarCity can provide valuable data to PG&E's DERMS, informing dispatch of the batteries in order to provide feeder-level dynamic capacity support and to reduce peak load. The smart inverters can provide both autonomous and on-demand voltage and reactive power support. This program is one of the first demonstrations of its size to use customer-sited home battery installations to provide these dynamic grid services as part of a utility and third-party provider ecosystem.