



SMART ENERGY HOMES
 PROVIDE MULTIPLE GRID BENEFITS

SOUTHERN CALIFORNIA EDISON PARTNERS WITH TESLA TO DEMONSTRATE SMART ENERGY HOMES

Tesla, through SolarCity, is partnering with Southern California Edison (SCE) and the SunSpec Alliance to demonstrate how residential distributed energy resources (DER) can provide distributed and wholesale grid services. In this project, SolarCity will install rooftop solar photovoltaics (PV), smart inverters, batteries, and controllable thermostats at 50 homes in Southern California Edison’s territory. These Smart Energy Homes can flexibly respond to grid conditions and utility control signals to provide real power and reactive power back to the grid both on-demand or autonomously. This project will demonstrate the value of aggregating customer-sited DER technologies to provide dynamic grid services on a local distribution as well as wholesale markets level.

AGGREGATED DERS WILL PROVIDE MULTIPLE GRID BENEFITS

Each Smart Energy Home will drive cost savings for participating residential customers who host the DER. Tesla and SolarCity will then aggregate the portfolio of 50 homes to provide distribution grid services to SCE, including dynamic capacity services from the batteries and controllable loads as well as reactive power services from the smart inverters. Tesla and SolarCity will also aggregate this portfolio to participate directly in the California Independent System Operator (CAISO) wholesale market in day-ahead and real-time energy markets. Finally, the resource will participate in simulated future CAISO markets to demonstrate the viability and value of aggregated DER participation in Frequency Regulation and Spinning & Non-Spinning Reserves, which currently do not allow DER participation. Tesla and SolarCity will use data from this project to show the magnitude of benefits that Smart Energy Homes can offer to customers, the distribution grid, and wholesale markets.

Customer

Southern California Edison

Location

Santa Ana, CA



Project size

50 Powerwall 2
 250 kW
 675 kWh

Applications

Dynamic capacity services, reactive power support, Frequency Regulation, Spinning & Non-Spinning Reserves

Commissioned

2016-2017

THROUGH PARTNERSHIPS, CALIFORNIA EMBRACES THE GRID OF THE FUTURE

The \$4M project is funded through a \$2 million grant award from the California Energy Commission (CEC) will fund the project, along with \$2 million in matching funding from project participants. This project was selected during the CEC's competitive bid process for the State of California's Program Opportunity Notice (PON-14-303) "Advancing Cleaner, Less Costly, More Reliable Distributed Generation to Enable Customer Solutions and Zero- Net Energy Communities."

For more detailed information on this project, please visit <http://sunspec.org/cec-pon-14-303/>.