

REDWOOD CITY, CA

Bay Area city supports EV trend while cutting power costs with energy storage

Customer Profile: A municipality serving the nearly 86,000 residents of Redwood City, CA in the heart of the San Francisco Bay Area

Customer Challenge

Meet sustainability goals with limited budget.

GridSynergy® Solution

Software-controlled energy storage coupled with EV charging

Benefits

- Greater access to EV charging in the community
- Further environmental goals without dipping into city budget
- Improved fiscal stability with reduced energy costs

“[ENGIE Storage] offered our city a unique solution that was both environmentally and fiscally sustainable.”

– Vicki Sherman, Environmental Initiatives Coordinator, Redwood City

Owing its name to a historic past as a major lumber port, the nearly 86,000 citizens that make up Redwood City, California have turned the town into a pleasant and tech-centric place to live, work and play. Featuring a revitalized urban center with bustling retail space, family-friendly neighborhoods, and a robust technology economy—with innovative start-ups and established companies the likes of Oracle and Electronic Arts—Redwood City holds a little bit of everything the greater Bay Area and Silicon Valley has to offer.

Pedestrians need not walk far to notice municipal signage stating the City’s official motto “Climate Best by Government Test.” In hopes of maintaining this distinction, local government leaders have shaped city operations to provide cost-effective, high-quality services in an environmentally responsible manner. Leadership in implementation and support of environmentally sustainable programs along with long-term fiscal health represent major priorities in the City’s strategic plan.

“We are not unlike most cities in the state of California. We have limited resources and funding but ambitious environmental goals,” says Vicki Sherman, Redwood City’s environmental initiatives coordinator. The City has worked with Silicon Valley thought leaders on solar initiatives, the federal government to streamline environmental permitting, and various incentives and resources provided by the state of California. “[ENGIE Storage] offered our city a unique solution that was both environmentally and fiscally sustainable.”

AN ELECTRIC INTRODUCTION TO STORAGE

Redwood City was introduced to ENGIE Storage by way of electric vehicle (EV) charging. Officials wanted to find a cost effective way to provide EV charging at city facilities. Supporting electric vehicles would help the City meet long-term clean air standards. However, charging equipment installation and operational costs represented significant barriers.

EV charging can be an irregular, power-intensive activity, creating a spike in demand on the grid. Utilities charge extra to cope with these conditions by way of demand charges. EV charging spikes, in addition to other facility power demands, such as heating and cooling, can result in surprisingly high energy costs. In some cases, these charges represent upwards of 50 percent of an electricity bill. Energy storage mitigates these costs by storing energy during periods of low use and cost and discharging during periods of peak use and cost.

Together with ChargePoint, a networked EV charging station provider and ENGIE Storage partner, the most appropriate EV charging equipment was selected. Energy analysts from ENGIE Storage walked the City through various energy cost scenarios with data from past utility bills and expected EV charging usage rates. Taking advantage of government incentives and a shared savings financing model, Redwood City received a no-cost proposal to install GridSynergy® energy storage coupled with EV chargers.

PLAN ENSURES VALUE

Two locations were chosen to deliver the most value to the City, residents, and visitors. The first site selected was a high-traffic, downtown municipal parking garage in proximity to retail shops, museums, theaters, restaurants, and CalTrain. The Redwood City Library in Redwood Shores was chosen as a second location, as it was surrounded by residential neighborhoods and commercial office space.

Two high-powered DC fast chargers, capable of charging electric vehicles in a matter of minutes as opposed to hours, were among the EV chargers installed. By pairing the EV chargers with energy storage systems, the City could provide a premium service without taking on higher energy costs. Sensing spikes in demand created by extra powerful chargers, the GridSynergy systems discharge to offset demand spikes at the facility.

EV charging stations at both locations are heavily used, with an average of 8-10 sessions per day. The GridSynergy energy storage systems are shaving multiple peaks per day (80 in May, 2015) caused by EV charging equipment and other power demands at the garage and library. The energy storage systems are expected to save nearly \$7,000 in annual demand charges at each location.



At the Marshall Street parking garage in downtown Redwood City, the GridSynergy energy storage system mitigates spikes in power demand due to heavy use of EV chargers and other electrical equipment.

AMBITIONS REALIZED

“Our objective was simple: Meet our ambitious environmental goals while being fiscally conscientious says Sherman. “At first we did not think this was an efficiency tool we could afford, but after [ENGIE Storage] walked us through their process, including a unique shared savings model, the benefits were clear.” With the paired installation of energy storage and EV charging, Redwood City is a little closer to meeting its aggressive sustainability goals while operating in a fiscally responsible manner.

About ENGIE Storage

ENGIE Storage helps power the world more efficiently and sustainably. As the nation's number one distributed energy storage company, we serve energy producers, distributors, and consumers, including utilities, network operators, and energy consumers in business and government.