

## CITY OF MONTEREY PARK

# How a hard-working water treatment plant runs leaner and greener with energy storage

**Location:** Monterey Park, CA

**Facility:** Serves 61,044 residents, producing 7,500 - 8,000 acre-feet of water each year

### Customer Challenges

Reduce energy demand charges and improve efficiency for water production plant that operates at peak capacity 24/7

### GridSynergy® Solution

500 kWh of software-controlled energy storage

### Benefits

- Improves sustainability by drawing less power from the grid during peak times
- Reduces demand charges on utility bill by 30 percent
- Helps keep electricity costs in check as new facility is added

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City of Monterey Park Public Works Division

Located in the San Gabriel Valley, seven miles from downtown Los Angeles, the City of Monterey Park draws much of its water from the local groundwater basin. In the early 1980's, widespread groundwater contamination caused by past industry practices was discovered in parts of the San Gabriel Valley and by the late 1990's the groundwater contamination had reached the City's production wells. As a result, the City of Monterey Park's Water Division operations are more complex and require more energy than standard water treatment facilities.

Because the current water treatment plant has limited water storage capacity, it must run its well pumps and groundwater treatment systems 24/7. This, together with a new advanced-oxidation/UV treatment facility and other aspects of the Water Division's operations raised the specter of high electricity bills for the City. One of the ways it sought to reduce this expense and meet its sustainability objectives was to deploy solar PV to generate its own renewable energy.

Reducing overall energy drawn from the grid (kilowatt-hours), however, would only solve part of the problem. An additional, significant portion of the energy bill is the demand charge—a surcharge for the highest period of demand during each billing cycle. As energy loads at the water treatment plant fluctuated throughout the day and over the course of the month, the City was incurring hefty demand charges by the kilowatt for sudden spikes in energy usage. To mitigate those spikes, the City turned to energy storage.

“As a community, we want to do our part and embrace clean energy projects to reduce environmental impact,” says Amy Ho, Principal Management Analyst at the City of Monterey Park Public Works Division. “We saw the opportunity to use energy storage for peak shaving at our water treatment plant so we could avoid demand charges as much as possible.”

## A STORAGE-FIRST PHASED APPROACH

While its solar project wound its way through a more protracted approval process, the City was eager to see what it could achieve with energy storage. It chose GridSynergy® from ENGIE Storage, because it was known in the industry as a highly solar-compatible solution. A presentation from ENGIE Storage gave the City the confidence that it could deploy energy storage first, knowing that it would work with whatever solar PV system would be installed in the future.

As it does with all commercial energy storage projects, ENGIE Storage began by using its GridSynergy software to analyze the water treatment plant's load profile and design a system that would optimize performance and cost savings. "ENGIE Storage looked at our power usage and helped us understand the cost savings potential of energy storage," says Ho. "They also helped us secure an SGIP [Self-Generation Incentive Program] rebate from our power utility."

Next, ENGIE Storage installed a 250 kW / 500 kWh battery-based energy storage system at the treatment plant, and worked with the utility to commission the energy storage system. Now, GridSynergy monitors loads and adjusts battery charge and discharge cycles as needed. For example, if it detects a pattern of spikes that coincide with the utility's peak-rate hours, the system will discharge power to lower the spikes ("shave the peaks"), reducing the associated demand charges.

## INVESTING IN A GREENER FUTURE

When the solar PV project is completed, the energy storage system will be configured to perform both peak shaving and solar capacity firming. This refers to a modification of the peak shaving algorithm to account for the impact of the variable solar generation on the plant's loads. GridSynergy will also perform energy arbitrage, whereby it will charge the batteries during off-peak-rate hours and discharge that stored energy during peak-rate hours when solar is unavailable. The net effect is the ability to supply the energy the plant needs using the most cost-effective source at any given time.

Keeping a firm grip on energy use at the plant is becoming even more important as a new \$8.5M state-of-the-art advanced oxidation/UV treatment facility has just been completed and will require more power. Over the ten-year operating period, the GridSynergy system will fine tune its charge/discharge cycles at the plant to help ensure the City stays within its overall energy cost budget.

The City is moving forward with other green energy initiatives as well, including a separate GridSynergy system at City Hall. "With GridSynergy, we're taking a more proactive approach to managing power demands," says Ho. "From an environmental perspective, it's the right thing to do—especially in a state that is undeniably affected by climate change."

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The GridSynergy web portal enables facility managers at Monterey Park's water treatment plant to monitor their energy savings while attending to other duties. When solar is installed at the plant, they will be able to see both energy storage and solar performance data on the same dashboard.

### About ENGIE Storage

ENGIE Storage (formerly Green Charge) 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.