



#### COMPLETION DATE

December 2008

#### LOCATION

Richmond, CA

#### INSTALLATION TYPE

Dual-axis tracking

#### SYSTEM SIZE (DC)

1.014 MW

#### TERM

20 years with buyout option at fair market value

#### SYSTEM AWARDS

2009 CASA (California Association of Sanitation Agencies) Outstanding Capital Improvements Project Award

#### PROJECT PROFILE

# West County Wastewater District

Solar Power Partners developed a 1.014 MW solar power system for the West County Wastewater District in Richmond, California, using a solar Power Purchase Agreement (PPA). Consisting of 89 dual-axis trackers, the system is the largest of its kind in the US and produces enough annual solar energy to offset emissions from 240 passenger vehicles.

*Photo courtesy of Premier Power*



## DESCRIPTION

The West County Wastewater District, located on the San Francisco Bay, provides wastewater collection, treatment, and disposal services for several cities and parts of Contra Costa County. In adopting solar energy, the agency was interested in the long term cost-saving benefits a solar PPA afforded and its no-money down approach. The solar PPA was an excellent solution: the wastewater district pays only for the power the system produces, does not incur operation and maintenance expenses, and sees savings on its electricity bill for the next twenty years—a plus for the District's ratepayers.

## CHALLENGES

The project faced several technical challenges. Situated on Bay mud, the area required a design that would ensure distributed weight. The District also wanted to utilize storm runoff ponds—which would require a design that could withstand standing water during the rainy season. Finally, the solar trackers needed to accommodate removal (if required) without impact to the land.

## APPROACH

SPP's in-house construction management team drew upon over thirty years of experience with a variety of construction methods to solve the technical obstacles. SPP worked with EPC partner Premier Power to design the solar structures to be dimensionally stable without causing differential settlement. Geotechnical engineering firm Questa Engineering contributed a controlled-density fill (CDF) sub-foundation to control the spread of weight.

Premier Power sourced the dual-axis trackers, made by ET Solar. Dual-axis trackers provide approximately 35 percent more output than a fixed tilt system due to their ability to track the sun at an optimal angle of incidence. The trackers were built to withstand the storm pond water levels, and the bases were constructed to "leave no trace," satisfying the requirement of clean removal, if needed.

## RESULTS

The iconic 1.014 MW system is the largest system of its kind in the United States, and a visually stunning example of partnership between public and private entities. The system was built in just four months after engineering challenges were solved, and the result is an industry award-winning system that generates fixed-price solar power.

The estimated annual production from the system is equivalent to removing the following emissions from:



1,308 metric tons of carbon dioxide



181 homes' electricity use



148,468 gallons of gas

Calculations are according to the US Environmental Protection Agency ([www.epa.gov](http://www.epa.gov))



“

I was pleased how quickly the units were assembled; having something assembled of this magnitude under a tight time constraint is pretty impressive. Without the solar Power Purchase Agreement, our cost to deploy would have been more challenging. Our ratepayers win, as we now have contractual stability over much of our energy costs for years to come. The working relationship between our staff, Solar Power Partners and Premier Power was extremely well tuned. ”

-EJ Shalaby,  
General Manager  
West County Wastewater District



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