



Background

Home to over 1.4 million people, Alameda County, California encompasses a land area of 738 square miles on the east side of San Francisco Bay. Alameda County has been a leader in smart energy strategies for years. The vision and leadership of the County's Board of Supervisors and General Services Agency has led to reduced annual energy usage and costs.

Challenge

As a leader in smart energy strategies, Alameda County wanted to evaluate solar electricity as a possible solution to further reduce operating costs. How could Alameda County achieve its vision of becoming a leader in solar energy?

"The combined solar electric power and energy efficiency solutions we implemented with PowerLight illustrate the future of energy and facility management. Our solar array combines the environmental benefits of solar energy with the ability to provide on-site power. This helped Alameda County lower overall energy costs, reduce pollution and conserve natural resources. Because the energy generation and cost savings from our system at Santa Rita Jail exceeded expectations, we made the commitment to double our County's solar deployments with these new projects."

Matt Muniz, P.E.
Energy Program Manager
Alameda County

COUNTY OF ALAMEDA CALIFORNIA



Solution

By leveraging one of California's most plentiful resources – abundant sunshine – and embracing renewable solar photovoltaic (PV) technology to generate clean, reliable power, Alameda County is significantly reducing operating costs and helping California achieve its sustainability goals.

Since the mid-1990s, Alameda County implemented a broad range of energy efficiency and renewable energy projects. The County installed its first solar electric system atop the Santa Rita Jail in April 2002. By August 2005, Alameda County had installed eight photovoltaic systems totaling over 2.3 Megawatts, making Alameda the largest solar-powered county in the nation. This system provides the equivalent electricity during the day to power over 2,200 homes.

The eight photovoltaic systems include: six rooftop arrays on County-owned facilities and two innovative solar tracking carport systems. In addition to the solar electric systems, the project included a comprehensive energy efficiency retrofit of the Santa Rita Jail.

Benefits

By integrating solar power generation with energy efficiency measures, Alameda County has demonstrated its leadership in defining both clean and cost-efficient energy solutions. The solar generation system is enabling Alameda to meet 6% of its electrical needs at its facilities with clean, renewable solar power. The grid-connected system reduces the County's electrical load, especially during peak demand times when the utility grid is the most strained and electricity is most expensive. Alameda County anticipates saving \$700,000 annually in avoided electricity purchases.

Alameda County's solar installations spare the environment from thousands of tons of harmful emissions, such as nitrogen oxides, sulfur dioxide and carbon dioxide. Over the next 30 years, the solar-generated electricity will reduce emissions of carbon dioxide by 20,500 tons. These environmental savings are equivalent to planting over 5,800 acres of trees or not driving 50 million miles on California's roadways.

■ Specifications



Santa Rita Jail
Location: 5325 Broder Blvd., Dublin, CA
Date Completed: April 2002
System Type: Rooftop
System Size: 1.18 MW
PV Surface Area: 3 acres



Office of Emergency Services
Location: 4985 Broder Blvd., Dublin, CA
Date Completed: October 2004
System Type: Rooftop
System Size: 117 kW
PV Surface Area: 9,000 square feet



Winton Avenue Government Building
Location: 224 W. Winton Ave., Hayward, CA
Date Completed: September 2004
System Type: Rooftop
System Size: 234 kW
PV Surface Area: 17,000 sq. ft.



Wiley W. Manuel Courthouse
Location: 661 Washington St., Oakland, CA
Date Completed: April 2005
System Type: Rooftop
System Size: 85 kW
PV Surface Area: 7,200 sq. ft.



Environmental Health Services
Location: 1131 Harbor Bay Pkwy., Alameda, CA
Date Completed: August 2005
System Type: Rooftop
System Size: 97 kW
PV Surface Area: 12,000 sq. ft.



Hayward Public Works
Location: 399 Elmhurst St., Hayward, CA
Date Completed: April 2005
System Type: Rooftop & Solar Tracking Carport
System Size: 53 kW Rooftop, 250 kW Carport
PV Surface Area: 36,200 sq. ft.



Fremont Hall of Justice
Location: 39439 Paseo Padre, Fremont, CA
Date Completed: March 2005
System Type: Solar Tracking Carport
System Size: 250 kW
PV Surface Area: 36,966 square feet

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About PowerLight

PowerLight Corporation is the nation's leading designer, manufacturer and installer of grid-connected solar electric systems and energy efficiency services. Founded in 1991, PowerLight's solar products produce reliable, affordable clean power for businesses and government agencies worldwide. Inc. Magazine has ranked PowerLight Corporation among the top 500 fastest growing privately held companies for the past five years. Today, PowerLight has worldwide offices and a full line of commercial solar electric products and services.

PowerLight's Mission

PowerLight is committed to making clean power a mainstream and affordable source of the world's energy supply. Our solar products enable companies to reduce operating costs by transforming clean, abundant solar energy into electricity.



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