

## USMC 29 Palms 29 Palms California



Blessed with surrounding open spaces and plentiful sunlight, the United States Marine Corps' (USMC) Air-Ground Combat Center was ideal for a large-scale solar electric system



Captain Crum, USMC

### System Stats

**Application Type:** EnergyMax™ Tracking Ground System

**Location:** Twentynine Palms, CA 92278

**Project completion:** August 2003

**Project size:** 1,291 kilowatts (peak)

**Electricity production:** 2,530,000 kilowatt hours per year

### Project description

Twenty-Nine Palms California is home to the immense United States Marine Corps Air Ground Combat Center, where more than 10,000 military personnel and their families reside. Winters are mild, but in the summertime temperatures can soar to 120 degrees. With the increased air conditioning requirements, power demand can increase from 6-9 megawatts during the winter to 15-20 megawatts during the summer.

To make optimal use of the available energy from the sun, a BP Solar EnergyMax Tracking System was chosen for most of the system. This system captures up to 35% more energy than a comparable flat system. The total system uses over 8,000 solar modules and stretches over 7 acres of land adjacent to the air base.

The solar power plant is one of a suite of onsite generation and energy efficiency measures designed to increase energy security and decrease electricity bills at the base. The energy projects are being implemented under an innovative energy service performance contract (ESPC) with Johnson Controls. Under the ESPC, Johnson Controls implements and finances the energy saving measures including the solar power plant, operates and maintains the systems, and guarantees savings to the base. The benefits of ESPC contracting to federal agencies are tremendous: the capital costs of the measures are financed by the ESPC contractor through utility bill savings and performance is guaranteed.

During the first summer of operation, the PV system contributed about 5% of the base's electricity requirements.

### Why solar was selected

Solar was a natural choice as a part of the solution to increase energy security and decrease energy bills for the base. The Mojave desert location enjoys over 320 sunny days a year. The solar power plant output coincides with the increase in summertime demand as temperatures soar, making it an effective means of reducing summertime energy requirements. In addition, both the Department of Defense and Department of Energy are seeking ways to achieve 10% of federal facility energy usage from renewable energy by the end of the decade. Generous incentive funding from the California Self Generation Incentive Program covered 50% of the cost of the plant.

"It saves money. It saves resources. And it doesn't pollute," said Captain Crum, United States Marine Corps.