"The construction went very quickly. It's some of the best quality work I've seen. Everything worked the way it was supposed to from the start."

Harry Franey, Chief of Energy Management at the California Department of Corrections and Rehabilitation

CUSTOMER SUCCESS STORY

Chuckawalla Valley State Prison

California Prison Leverages Flexible Service Offering To Reduce Energy Consumption

The California Department of Corrections and Rehabilitation has more than forty correctional facilities across the state. Each facility is mandated by law to be a model of energy efficiency. Chuckawalla Valley State Prison (CVSP) is one of those facilities. CVSP houses about 3,700 medium to low security inmates in the desert outside Blythe, California near the Arizona border.

In 2004, California Governor Arnold Schwarzenegger signed California Executive Order S-20-04 mandating that state agencies and departments leverage environmentally beneficial alternatives to reduce grid-based power 20% by 2015. Harry Franey, Chief of Energy Management at the California Department of Corrections and Rehabilitation, is responsible for implementing this executive order in an economically viable manner and creating an ethic of energy conservation across the correctional system. Franey says, "We are always looking for improvements in energy efficiency, and photovoltaic solar systems fit in nicely. The California Department of Corrections and Rehabilitation is a great candidate for photovoltaics for a variety of reasons. The sunshine is very good in California and we have nearly unlimited land around our correctional facilities to install ground-mounted solar panels."

Challenge "Our major requirement is to make sure that when these alternative generation systems go in, they don't end up costing us more than what we would have paid the grid utility for the same energy. We are a large TOU (Time of Use) customer, so the price we pay for our electricity from grid utilities is a function of energy consumed, power and time. TOU rates, unlike flat rates, complicate the pricing formula. Let's say our average cost per kWh is $0.10; under a flat rate it wouldn't matter when the solar system produced energy, we would simply be billed based on what the meter indicated we used at the average rate. We cannot use the average rate because of the dynamics of TOU pricing. As an example of the scenario we had to avoid, we could end up paying more with a solar system if a cloud covers the system for 15 minutes at 2 pm during the peak power period and it's temporarily not generating its 1 MW output. We would then have to pay the demand charge for 3 MW versus 2 MW of peak usage to the grid utility company for that month because for 15 minutes we imposed that extra load on the grid."

The Department of Corrections and Rehabilitation was principally interested in demand charge savings based on lowering peak demand rather than on savings based on the kWh rate, and they were challenged to find a vendor that could contractually ensure that the facility would never pay more for the solar system power than they would if they bought it all from the grid.

GOVERNMENT

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Project Profile: **Chuckawalla Valley State Prison**

Industry: Corrections and Rehabilitation/Government

Location: 12 miles west of Blythe, California near the border with Arizona

Organization: Chuckawalla Valley Prison is a California State Prison that holds around 3,700 mostly low and medium security inmates.

System Type: Ground-mounted solar panels

System Size: 1.2 MW

Capital Outlay: $0

Solution The Chuckawalla Valley project was the first implementation of solar photovoltaic generation at a California state prison facility. The solar system has been operational since June 2006 generating about 1MW at peak production for a 3 MW facility, or about a third of the facility's total peak load.

Recalls Franey, "The construction went very quickly. I was impressed when we went out there to take a look at it. All the wires, connections and terminations were neat and clean. It's some of the best quality work I've seen. We tested the emergency power and everything worked as it was supposed to. Normally, especially when you're working with high voltage, things go wrong during the testing and they have to be fixed. In this case, everything worked the way it was supposed to from the start.

"The SunEdison solution is an especially good fit for government customers. The state did not have to capitalize the project," states Franey. "Tax credits, accelerated depreciation, and rebates, while meaningless to government entities, are powerful economic factors to our project partner and are the catalyst for projects like the CVSP solar project; such as ours to make economic sense. This project is a really good partnership."

Benefits Franey says, "A significant benefit of on-site generated power is increased reliability. When you look at the grid infrastructure from the power plant to the transformers to the wires, there's always that chance that something can fail. Having an on-site system is much more reliable than the grid and almost akin to having a backup generator. If we lose the grid, we automatically separate from the grid and go to backup power. Once things stabilize with the backup power online, we can reengage the photovoltaic power.

"Do we have to make money off of these things? It's always nice, but the primary reason we're doing it is to limit our demand for grid-based power. The thing that is driving this is the country's dependence on foreign oil. We need to break that cycle, and we're hearing that at the highest levels of government now.

"Not everybody in the solar industry was interested in putting a deal like this together. You have to give SunEdison credit for stepping out and doing this. We consider SunEdison's implementation a success and are interested in repeating this at all the viable facilities across the state. This is just the beginning," concludes Franey. "We have 33 adult facilities and eight youth facilities, and it would be great if we could put in a photovoltaic system at each one."

About SunEdison: SunEdison is North America's largest solar energy services provider, and operates across a global marketplace. We deliver predictably priced solar energy services to complement your existing utility services. Unlike other solar companies, SunEdison provides a fully managed service; we finance, install, own, operate, monitor and maintain photovoltaic power plants for our commercial, government and utility customers without the high capital outlays traditionally associated with solar energy.