



D.T. Locke Ranch
Firebaugh, California



System Size	Estimated Annual Production	Installation Date	Synchronization Date
36 kW	48,000 kWh	February- June 2003	August 2003
Modules	Inverters	Panel Orientation	Panel Pitch
504 Sharp	6 - Xantrex/1 -Aqua Max	Southwest	37°

Project Description

The D.T. Locke Ranch is an 1,800-acre diversified family farm producing cotton, alfalfa, and almonds and has been in continuous production since 1955. It is owned and operated by Gary and Mari Martin and family members, who are 5th generation Californians.

The 36 kW array provides power to operate a 50-hp irrigation pump, an adjacent farm shop, and nearby residence. The innovative system was designed and installed by World Water & Power Corporation and synchronized to the PG&E grid in August 2003.

Major Challenges/Solutions

Major challenges were constructing the large (108' X 34') steel framework to hold the solar array and routing DC power cable 420 feet from the solar array under a large irrigation canal to the electrical equipment shed. Interconnection details were eventually overcome but caused a 90-day delay in full system synchronization. Good engineering, design and construction techniques helped to overcome these challenges.

Financial Benefits

Total Cost	\$295,000
PG&E Rebate	\$147,500 (\$4.50/watt 2002)
Financed	\$147,500
Federal Tax Credit	10% of cost paid (2002)
CA Tax Credit	15% of cost paid (2002)

Environmental Enhancements over 25-year project life (CEC solar estimate worksheet)

CO2 reduction:	57,780 lbs
SO2 reduction:	1.08 lbs
NO reduction:	80.52 lbs

Quote

"An excellent system that has exceeded all our expectations. I would build it again in a minute"

Gary Martin

D.T. Locke Ranch Owner/Manager