

USA: Shea Homes – San Angelo

BIODATA

PV community name: Shea Homes – San Angelo
Kind of urban area: Residential – urban
Main building type in community: Houses - single houses
New/Retrofit/Added: New district/community
Type of project: Commercial project
Start of operation: Year 2001
City, state, etc.: San Diego, CA
Country: USA
Latitude: N32 42' 55"
Longitude: W117 9' 26"

PV SYSTEM CHARACTERISTICS

Total PV power: 120 kW
Number of houses/buildings: 306 single-family homes (all have solar hot water, 100 have PV)
PV power per unit: 1.2 kWp
Energy yield per year: 1988 kWh per system
Main PV system type: Grid-connected - demand side
Main PV application type: Inclined roof – mounted
Main PV module type: Regular framed module
Main PV cell type: Mono-crystalline silicon
PV module manufacturer/brand: AstroPower
Inverter manufacturer/brand: -
Investment for PV systems: -

OWNERSHIP

Building owner: Inhabitant
PV owner: Inhabitant
PV energy user: Inhabitant

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PV COMMUNITY DESCRIPTION

PV Community Brief

Shea Home builders were in the process of a new development when the western energy crisis hit California in 2000. In some cases, San Diego Gas and Electric utility bills nearly tripled in one month resulting in a very strong market for high efficiency homes. Still at this point PV was not a standard feature in the development and was offered on only 100 residences.

Grid issue

Standard grid interconnection was not yet well established in California at the time of this development. Input from the builder and the San Diego Regional Energy Office helped develop the standardization of PV interconnection as a result of this project.

Urban planning and architectural issues

The Shea development is a typical upper middle class residential design for the State of California. The builder worked directly with the manufacturer and yet mounting on the barrel tile roofs was still an issue.

The development layout had already been established prior to the inclusion of the solar options and because of the aesthetically desirable broken roofline, only south exposure orientations were considered for solar orientation. Later developments found the broken roofline to be an asset and that varied orientation of distributed generation helped with the utility's afternoon peak.

Economic / financial issues

At the time of the Shea development, California offered \$3.50 per watt for PV installations and towards the solar hot water heat. There were no Federal tax credits available at this time.

Other remarks

The Shea homes development was the ice breaker for both high performance homes and homes with a standard PV system. The builder discovered that the solar homes sold first and that even the non PV home purchases had some causal effect due to the "solar Community"

COMMUNITY INFORMATION

Project leader company: Shea Homes

Other project company:

Project's www: www.sheahomes.com