

USA: Clarum Homes-Vista Montana

BIODATA

PV community name: Clarum Homes – Vista Montana
Kind of urban area: Residential – urban
Main building type in community: Houses - single houses
New/Retrofit/Added: New district/community – building integration
Type of project: Commercial project
Start of operation: Year 2003
City, state, etc.: Watsonville, CA
Country: USA
Latitude: N36 54' 59"
Longitude: W121 46' 18"

PV SYSTEM CHATACTERISTICS

Total PV power: >300 kW
Number of houses/buildings: 177 single-family homes, 80 townhouses, and 132 apartments
PV power per unit: 1.2 to 2.4 kWp
Energy yield per year: 1400 kWh/kWp
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

Vista Montana is one of many zero energy home (ZEH) developments by the Clarum Homes Development Company. It is the largest ZEH development in the US. Clarum made a commitment to ZEH in 1999 and introduced the [Enviro-Home™](#) in 2004. The program has also earned the U.S. Environmental Protection Agency's ENERGY STAR® seal, ConSol's ComfortWise SM designation, and the California Building Industry Institute's California Green Builder certification.

Between the PV and the energy efficiency features, the homes energy bills are reduced nearly 90%. These features include tankless on-demand water heater, a high-efficiency furnace, a foam-wrapped building envelope, increased insulation, radiant roof barrier, advanced HVAC technology, tightly sealed ducts, and low-E energy-efficient windows, ceiling fans, fluorescent light bulbs. Water conserving plumbing fixtures, and water conserving landscaping are also incorporated, providing homeowners further utility savings. Green building products also provide a healthier living environment.

Grid issue

There were no specific grid issues. Pacific Gas and Electric is the largest IOU in the US state of California and second utility with the most solar in the US. The systems are interconnected and net metered with the exception of the PV on the apartment buildings, because laws prevent the landlord/building owner from selling electricity to tenants. Instead the PV energy is used for common loads and maintenance fees are reduced.

Urban planning and architectural issues

The popular California home style is a Mediterranean which includes tile roofs, However, the offset panel mounts have proven successful and works aesthetically with the architectural design.

The development layout is a grid to assure economical land use. In this case the multiple roof lines assist in correct orientation of the PV. The PV was a standard feature to the single family homes and town houses at a level of 1.2-2.4 KWp per residence.

Economic / financial issues

The state of California offers substantial rebates for PV systems and has some of the highest utility rates in the US. Additionally, residents of the state experienced rolling blackouts from electric supply problems. Therefore the market for ZEH is strong in the state. However, Clarum was one of the first US developers to enter the ZEH market and also discovered that a home with standard energy efficiency and PV in the design, differentiated the product from other home builders. The homes sold faster so that capital funds were not tied up as long and could be reutilized more quickly, thus increasing profits. In the case of Vista Montana, the development was built and sold out in one year. The original advertised price range was \$399,000-\$499,000, but some homes sold for as much as \$600,000.

Clarum works with the United States Department of Energy, Building America Program to use their cost and energy savings analysis to point to the most cost-effective combination of features for the climates it builds in. Once a cost-effective combination is chosen, economies of scale can be achieved through volume purchasing and training of subcontractors

Other remarks

John Suppes, founder and president of Clarum Homes advises other builders to just try solar on site generation with PV. "Solar electric power adds value to the homes we build," said Suppes. "By giving homeowners the tools they need to generate their own electricity, we're enabling them to save money on their utility bills. We're also differentiating our homes in the marketplace. We set out to provide exceptional value for our customers by adding solar power, and in the process we did something exceptional for our business

COMMUNITY INFORMATION

Project leader company: Clarum Homes

Other project company: ConSol

Project's www: <http://www.clarum.com/>
<http://www.consol.ws/>

Contact address: Corporate Headquarters
599 College Avenue
Palo Alto, California 94306