

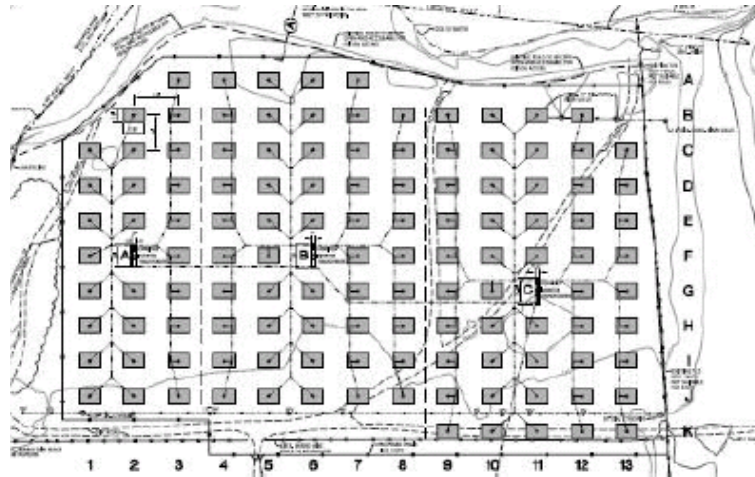
# Victor Valley College – SolFocus Solar Power Plant Performance

Updated:  
04.25.2011

## About the Solar Power Plant

Doc Owner:  
Jane Melia

The Victor Valley College solar micro-generating facility is located on the main campus of Victor Valley College in Victorville, California. It consists of 122 SolFocus SF-1100S CPV arrays rated at 8.4 kW each. When the plant went operational in May 2010 it was the largest Concentrator PV (CPV) plant in North America.



The facility is connected to the regional electrical grid operated by Southern California Edison and will produce approximately 2.6 million kilowatt-hours annually, which is roughly 30 percent of the College's electricity demand. Construction of the six acre plant was completed in three months.

## Energy Modeling Overview

Prior to installation energy output estimates were generated with the SolFocus Engineering Energy Calculator (SEEC) using the hourly DNI data for the site, together with the corresponding temperature and wind speed data and applicable losses.

SEEC has been reviewed in depth by the independent third party engineering company Black and Veatch<sup>i</sup> who concluded that "the SEEC modeling software is a sophisticated tool for estimating energy production from SolFocus systems. It is a more flexible and advanced than most "single point efficiency" models that are currently used in the market. SEEC is tailored towards shading analysis which aids in site layout design."

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The energy calculation methodology and analysis are described in detail in a separate document<sup>ii</sup>.

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## Expected vs. Actual Energy Generation

The following table shows the actual performance on a month by month basis compared to expected performance for the period October 2010 to February 2011. The expected performance has been normalized for actual DNI and a force majeure event of site flooding that occurred in December and early January, impacting the availability ratio.

Overall energy production over this period is 99.8% of the modeled output.

Month	Expected DNI (kWh/m <sup>2</sup> /Day)	Measured DNI kWh/m <sup>2</sup> /Day	Modeled Energy (kWh/Day)	Actual Energy (kWh/Day)	Availability Ratio
Oct.	7.26	6.18	5,899	6,039	1
Nov.	6.47	6.91	6,696	6,791	1
Dec.	5.78	3.85	3,733	3,623	0.71 <sup>iii</sup>
Jan.	5.44	6.02	5,833	5,484	0.935
Feb.	5.42	6.91	6,700	6,862	1
<b>Total</b>			28,861	28,798	
<b>Actual / Expected</b>				99.8%	

## Contact Information

For questions regarding the information provided in this document, please contact SolFocus at Radical Sun Systems

[www.radicalsun.com](http://www.radicalsun.com)

<sup>i</sup> SolFocus Technology Review Report, Black & Veatch, March 2010, Section 7.2

<sup>ii</sup> Solar Resource Energy and Time of Delivery 2011.0314

<sup>iii</sup> Site flooding, force majeure event