



SOLAR
OPTIMUM

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Local Experts. Real Relationships. Honest Talk.

**Third Laguna Woods Mutual
Phase 1 update; 1,320,000kWh
Sunpower Helix Rooftop
Solar Power Plants**

August 12, 2016



Project Requirements:

- Project needs to be installed and mechanically complete by Dec 31 2016
- Filing for NEMMA to be complete by August 15, 2016
- Roofers to mobilize now and complete rooftops in advance of our solar mobilization.
- Move to phase 2 - construction phase as soon as possible once permits are approved.

Project Update : SOLAR OPTIMUM



3rd Laguna Woods Mutual

DC Capacity kW DC

Power Production kWh

EAST CLUSTER BUILDINGS:

Sunpower Tier 2

Sunpower PV Sim

✓ 2353 Via Puerta-R

78.48 kWDC

125,170 kWh

✓ 2381 Via Mariposa-R

82.40 kWDC

127,538 kWh

2393 Via Mariposa West

78.48 kWDC

124,474 kWh

2394 Via Mariposa West

86.32 kWDC

138,210 kWh

2397 Via Mariposa West

75.86 kWDC

120,125 kWh

2399 Via Mariposa West

66.70 kWDC

106,038 kWh

✓ 2400 Via Mariposa West-R

79.78 kWDC

125,946 kWh

Capacity

548 kWDC

867,501kWh Production

East Cluster Load=

868,878kWh



Project Update :

WEST CLUSTER BUILDINGS:

- 3242 San Amadeo- Villa Puerta
- 3243 San Amadeo- Villa Puerta
- 3420 Calle Azul - Casa Dorado
- ✓ 5372 Punta Alta- Villa Puerta-R
- ✓ 5510 Paseo Del Lago West-R

	69.32 kWDC	109,973 kWh
	53.95 kWDC	90,964 kWh
	48.39 kWDC	76,379 kWh
	69.32 kWDC	109,115 kWh
	52.32 kWDC	83,399 kWh
Capacity	293 kWDC	469,830kWh Production
West Cluster load= 571,678 kWh		

841kW DC

1,337,331kWh Total Production

1,320,000 kWh= Target

17,331kWh +



Project Cost :

We had originally estimated \$2.81 per watt for the installation of the systems at Third Mutual. As a result of the value engineering from phase one design process we are able to pass on savings created by reducing wire size and labor costs from moving equipment to the roof and reduce the overall system cost to \$2.75 per watt.

This had positive affected our production of KWHR slightly at the request of Sunpower we modified our initial designs. This will speed up the construction phase and help provide assurance of mechanical completion prior to Dec 31, 2016



Project Cost :

1. Turnkey Installation of Sunpower Helix on 12 host buildings to develop 841 kw system producing 1,337,331 kwhr at \$2.75 per watt
\$2,312,750.00
1. Care Fee for developing PPA transaction \$ 69,382.00
2. Total Project Cost \$2,382,132.00
3. Total Project cost per watt \$2.83

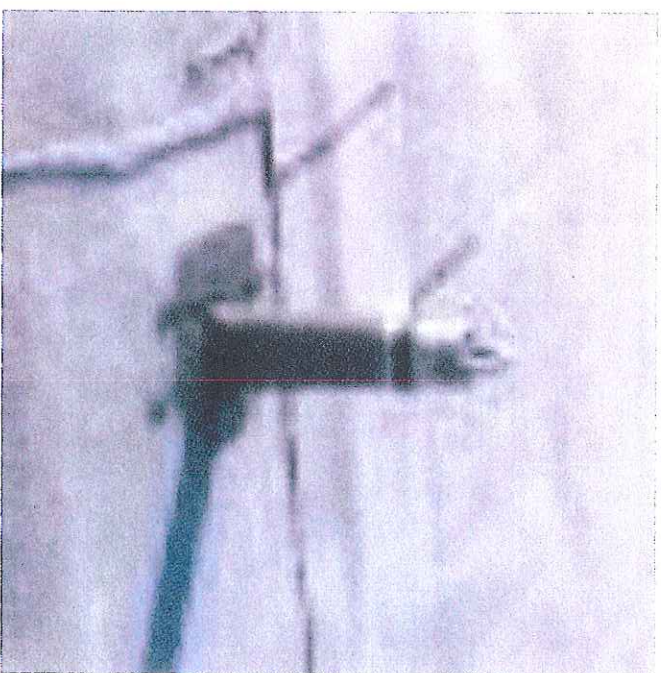
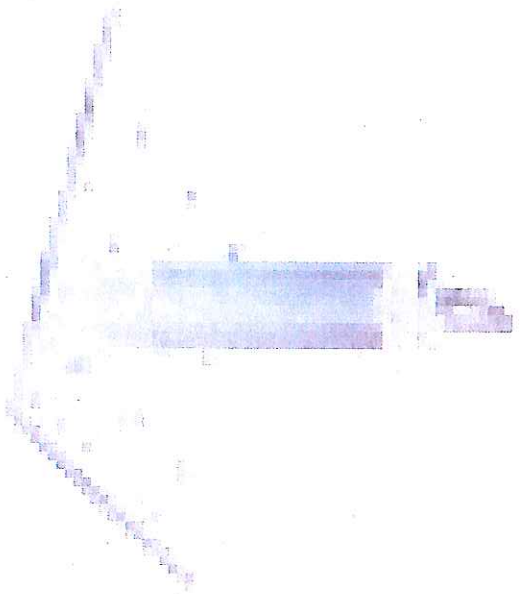


Next Steps

1. Execute project finance LOI with Care Funding
2. Phase 1 design and interconnection process complete by August 15, 2016, submit completed interconnection documents.
3. Immediate submission of full project plan sets to plan-check for permitting.
4. Begin Construction phase no later than September 15, 2016.
5. Await feedback from utility to determine if there will be any required utility side upgrade to support the solar we are adding to the grid.



Fall Protection:

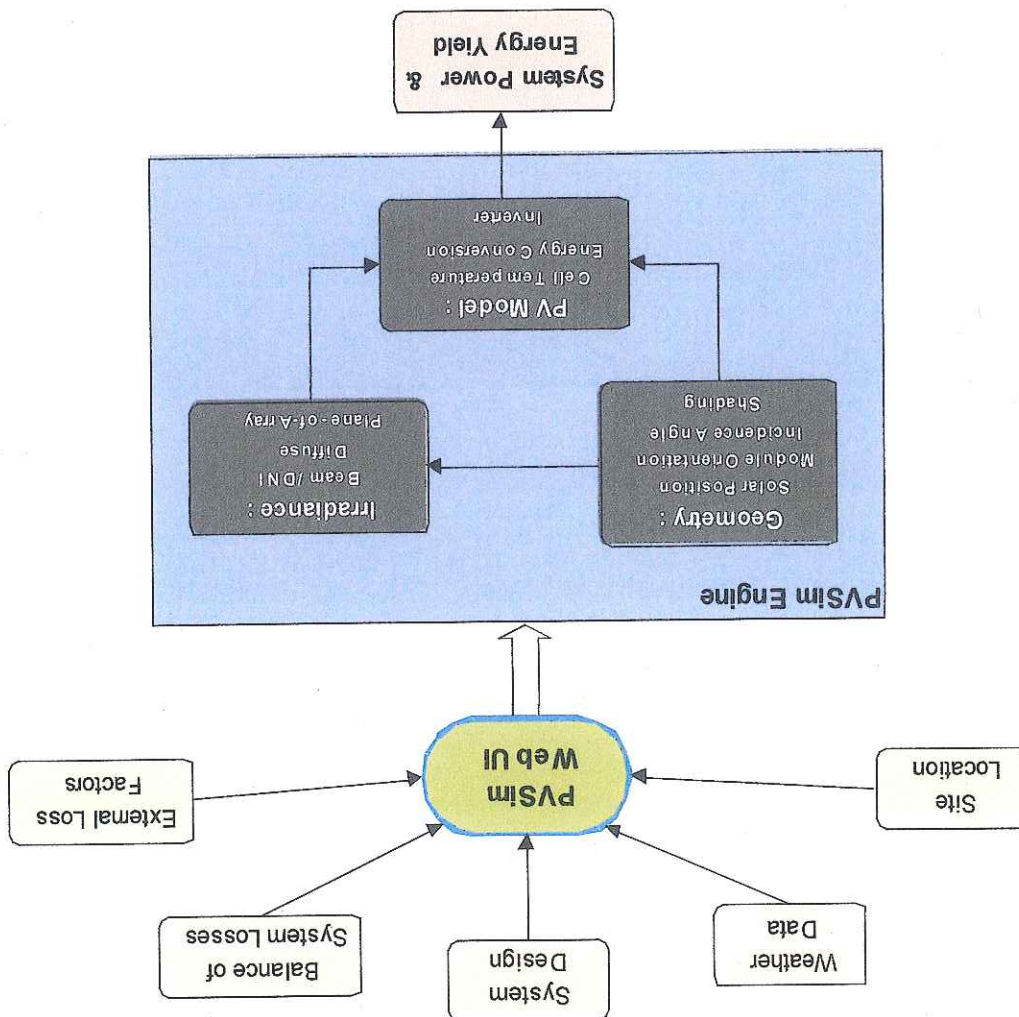


INTRODUCTION



1. Perez R., Ineichen P., Maxwell E., Seals R. and Zelenka A. (1992). Dynamic global to direct irradiance conversion models. ASHRAE Transactions Vol. 98, Part 1, 3578, pp 354-369.

Figure 2: PVSim Data Flow diagram. User inputs are passed to the tool's primary models through the PVSim UI. The tool calculates the position of the module and sun, the amount of sun on the module surface, the cell operating temperature, the DC module and inverter power, and system AC power and energy.



Application #	Meter Number	SA Number	Address	Xfmr Size (kVA)	Gross Inverter Gen (kW)	Notes / Comments / Status	# of meters	Cost @ \$5/meter	Cost @ \$20/meter	Cost @ \$2.70/meter	Estimated monthly production (kWh)	Production value @ \$0.15/kWh	Total cost @ \$20/meter
SCE-77221	254000-005918	3-003-5019-90	3242	75	56	PTO 3/15/17	195	975	3900	526.5	9415	1412.25	19500
SCE-77223	254000-011437	3-003-4332-79	5510	75	44	PTO 3/17/17	44	220	880	118.8	6388	958.2	4400
SCE-77224	254000-016548	3-003-4315-18	3420	45	39	PTO 3/2/17	45	225	900	121.5	6580	987	4500
SCE-77226	254000-016424	3-003-5019-88	3243	75	50	PTO 3/9/17	34	170	680	91.8	8189	1228.35	3400
SCE-77234	254000-024755	3-001-2003-73	2381	75	63	PTO 3/7/17	12	60	240	32.4	11183	1677.45	1200
SCE-77841	254000-024542	3-001-2000-45	2400	75	63	PTO 3/2/17	16	80	320	43.2	10856	1628.4	1600
SCE-77847	254000-013083	3-003-4319-35	5372	75	56	PTO 3/2/17	20	100	400	54	9415	1412.25	2000
SCE-77843	254000-024752	3-001-2003-31	2353	45	36	PTO 7/17/17 part. w/ 2391	5	25	100	13.5	6388	958.2	1100
SCE-77839	254000-024541	3-001-2000-27	2399	75	51	Interconnection made at 2403							
SCE-77229	254000-008339	3-001-2000-19	2397	75	60	PTO 3/17/17	9	45	180	24.3	10305	1545.75	900
SCE-77232	254000-008337	3-001-2000-08	2393	75	60	Interconnection made at 2390							
SCE-77231	256000-216339	3-001-2000-12	2394	75	68	PTO 4/22/17, SCE work comp. 8/3	20	100	400	54	11727	1759.05	2400
SCE-112938	254000-001740	3-001-1999-47	2391	45	24	PTO 7/17/17 part. w/ 2353	6	30	120	16.2	4265	639.75	1320
SCE-112941	254000-024543	3-001-1832-25	2403	150	51	PTO 7/17/17	4	20	80	10.8	9041	1356.15	880
SCE-112942	254000-001741	3-001-1999-88	2390	75	60	PTO 7/17/17	8	40	160	21.6	10653	1597.95	1760

All sites are on TOU-GS-1-A schedule

TOTALS:

418

2090

8360

1128.6

114405

17160.75

44960