PVSYST
PHOTOVOLTAIC SOFTWARE

PVsyst - Simulation report

Grid-Connected System

Project: New Project

Variant: SFO 1MW Canopy – 15° Tilt, 9 Inverters, 2502 Modules

No 3D scene defined, no shadings

System power: 1001 kWp

Lomita Park - United States

Author

PVsyst V8.0.12
VC1, Simulation date:
04/06/25 16:37
with V8.0.12

Project summary

Geographical Site
Lomita Park
United States

Situation

Latitude	37.62 °(N)
Longitude	-122.38 °(W)
Altitude	9 m
Time zone	UTC-8

Project settings
Albedo 0.20

Weather data
Lomita Park
Meteonorm 8.2 (1991-2005) - Synthetic

System summary

Grid-Connected System
No 3D scene defined, no shadings

Orientation #1
Fixed plane
Tilt/Azimuth 15 / 180 °

Near Shadings
no Shadings

User's needs
Unlimited load (grid)

System information

PV Array		Inverters	
Nb. of modules	2502 units	Nb. of units	9 units
Pnom total	1001 kWp	Total power	900 kWac
		Pnom ratio	1.11

Results summary

Produced Energy	1289.1 MWh/year	Specific production	1288 kWh/kWp/year	Perf. Ratio PR	87.09 %

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General parameters

Grid-Connected System

No 3D scene defined, no shadings

Orientation #1
Fixed plane
Tilt/Azimuth 15 / 180 °

Models used
Transposition Perez
Diffuse Perez, Meteonorm
Circumsolar separate

Horizon
Free Horizon

Near Shadings
no Shadings

User's needs
Unlimited load (grid)

PV Array Characteristics

PV module

Manufacturer	Generic
Model	JKM-400M-72H
(Original PVsyst database)	
Unit Nom. Power	400 Wp
Number of PV modules	2502 units
Nominal (STC)	1001 kWp
Modules	139 string x 18 In series
At operating cond. (50°C)	
Pmpp	913 kWp
U mpp	668 V
I mpp	1367 A

Inverter

Manufacturer	Generic
Model	Sunny Highpower SHP100-21-PEAK3
(Original PVsyst database)	
Unit Nom. Power	100 kWac
Number of inverters	9 units
Total power	900 kWac
Operating voltage	570-1000 V
Pnom ratio (DC:AC)	1.11

Total PV power

Nominal (STC)	1001 kWp
Total	2502 modules
Module area	5034 m²
Cell area	4468 m²

Total inverter power

Total power	900 kWac
Number of inverters	9 units
Pnom ratio	1.11

Array losses

Thermal Loss factor
Module temperature according to irradiance
Uc (const) 20.0 W/m²K
Uv (wind) 0.0 W/m²K/m/s

DC wiring losses
Global array res. 8.1 mΩ
Loss Fraction 1.50 % at STC

Module Quality Loss
Loss Fraction -0.75 %

Module mismatch losses
Loss Fraction 2.00 % at MPP

Strings Mismatch loss
Loss Fraction 0.15 %

IAM loss factor
Incidence effect (IAM): Fresnel, AR coating, n(glass)=1.526, n(AR)=1.290

0°	30°	50°	60°	70°	75°	80°	85°	90°
1.000	0.999	0.987	0.963	0.892	0.814	0.679	0.438	0.000

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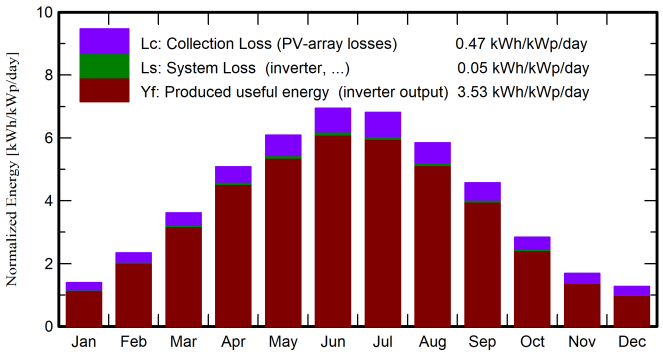
Main results

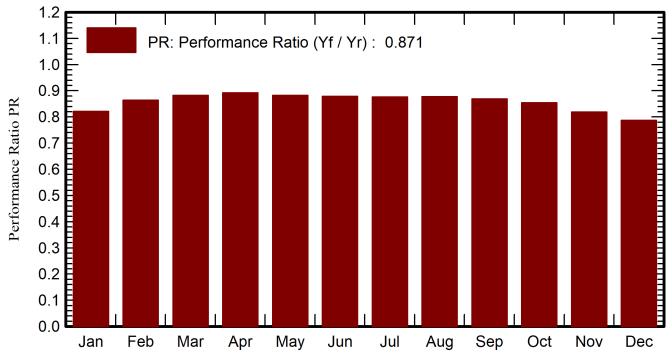
System Production

Produced Energy	1289.1 MWh/year	Specific production	1288 kWh/kWp/year
		Perf. Ratio PR	87.09 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

	GlobHor kWh/m²	DiffHor kWh/m²	T_Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray MWh	E_Grid MWh	PR ratio
January	66.2	30.00	9.25	43.4	37.6	36.3	35.7	0.822
February	88.5	36.88	10.56	65.6	59.7	57.6	56.7	0.864
March	136.4	49.95	12.51	112.2	106.0	100.6	99.1	0.882
April	170.1	69.50	13.57	152.5	147.1	138.1	136.0	0.891
May	198.9	74.20	15.40	188.6	183.4	169.1	166.5	0.882
June	214.4	75.82	16.78	208.4	203.3	186.1	183.2	0.878
July	220.9	72.54	17.51	211.2	206.1	188.1	185.2	0.876
August	198.4	67.90	17.41	181.3	175.5	161.7	159.2	0.877
September	163.8	49.56	16.99	137.2	130.3	121.1	119.3	0.869
October	116.5	46.50	15.67	88.1	80.8	76.4	75.3	0.854
November	75.8	32.91	12.39	50.8	44.2	42.3	41.7	0.819
December	65.9	26.56	9.75	39.6	32.9	31.7	31.2	0.787
Year	1715.7	632.34	14.00	1479.1	1407.0	1309.2	1289.1	0.871

Legends

GlobHor	Global horizontal irradiation
DiffHor	Horizontal diffuse irradiation
T_Amb	Ambient Temperature
GlobInc	Global incident in coll. plane
GlobEff	Effective Global, corr. for IAM and shadings
EArray	Effective energy at the output of the array
E_Grid	Energy injected into grid
PR	Performance Ratio

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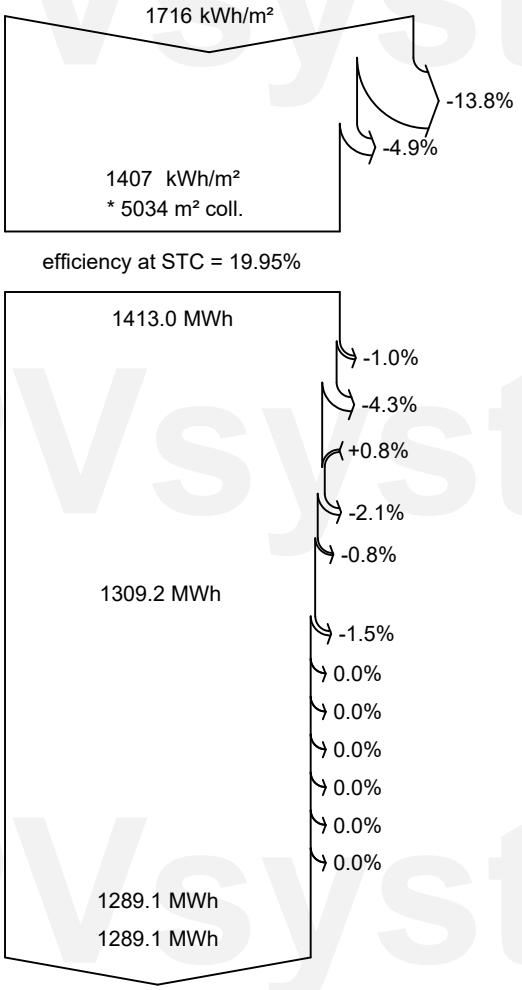
Loss diagram



Global horizontal irradiation

Global incident in coll. plane

IAM factor on global

Effective irradiation on collectors

PV conversion

Array nominal energy (at STC effic.)

PV loss due to irradiance level

PV loss due to temperature

Module quality loss

Mismatch loss, modules and strings

Ohmic wiring loss

Array virtual energy at MPP

Inverter Loss during operation (efficiency)

Inverter Loss over nominal inv. power

Inverter Loss due to max. input current

Inverter Loss over nominal inv. voltage

Inverter Loss due to power threshold

Inverter Loss due to voltage threshold

Night consumption

Available Energy at Inverter Output

Energy injected into grid

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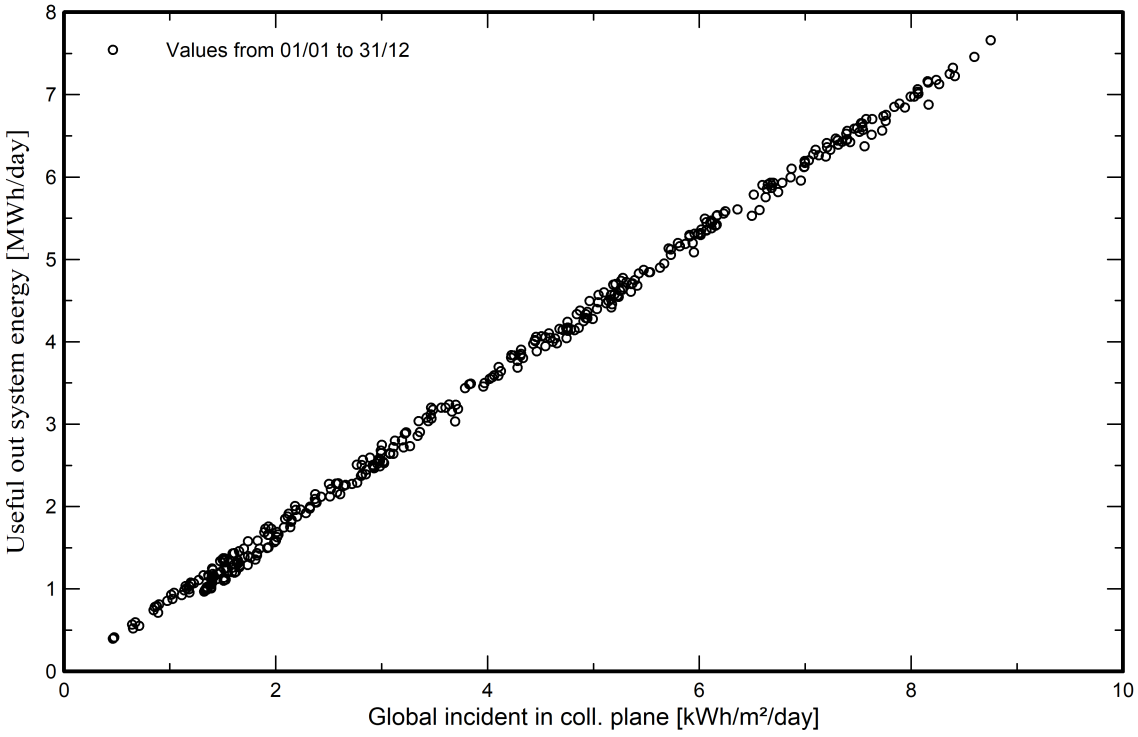
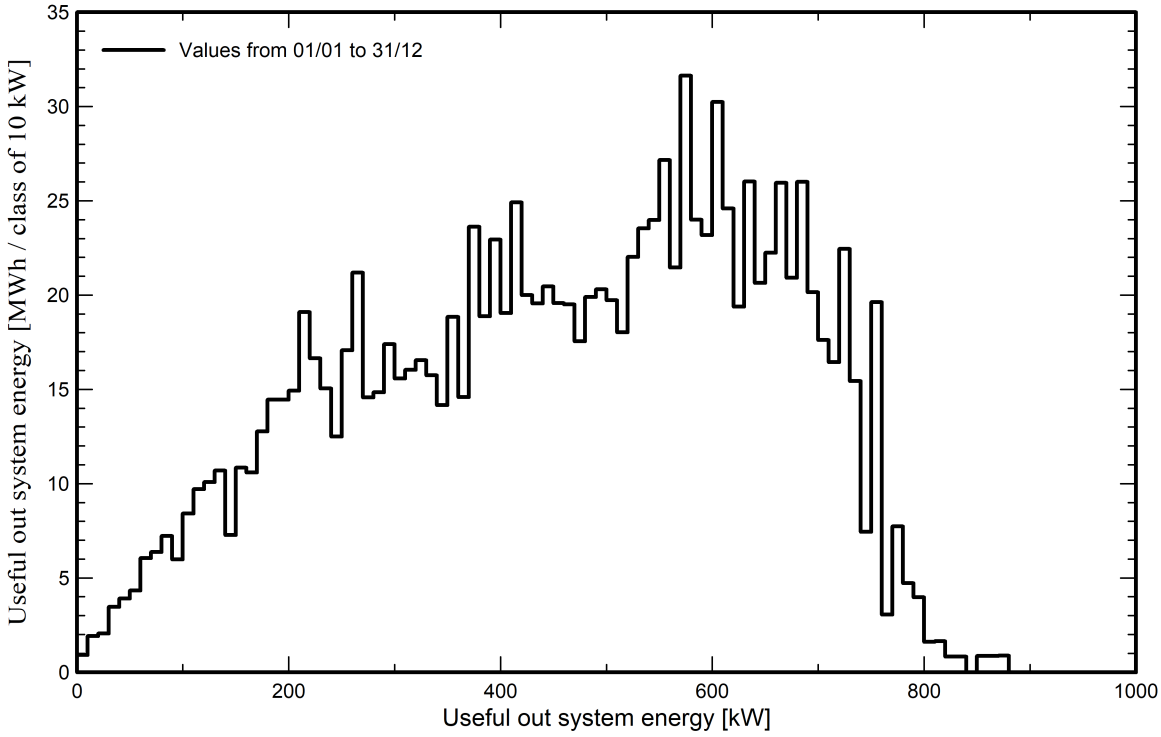
Predef. graphs

Daily Input/Output diagram



System Output Power Distribution



Single-line diagram

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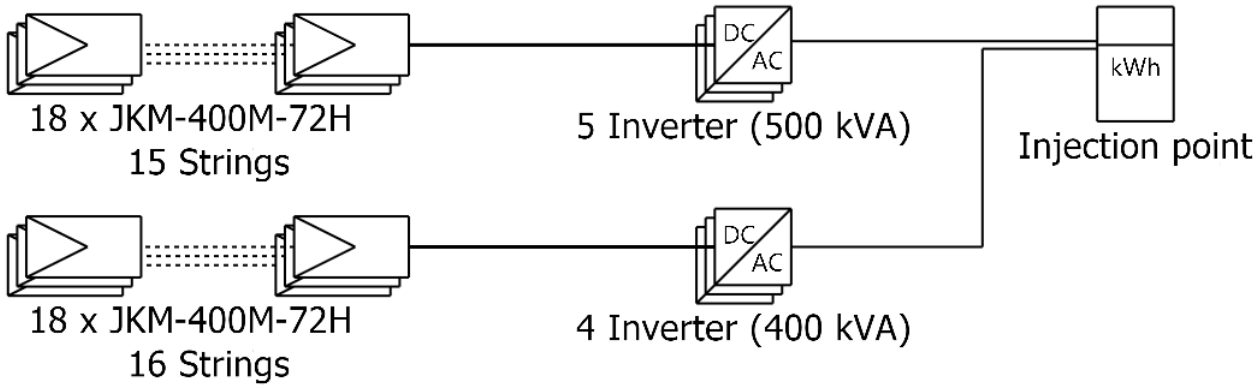

PV module	JKM-400M-72H
Inverter	Sunny Highpower SHP100-21-PEAK3
String	18 x JKM-400M-72H

	New Project	
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