Version 7.4.6

PVsyst - Simulation report

Grid-Connected System

Project: Saha Farm

Variant: 02

No 3D scene defined, no shadings

System power: 600 kWp

Ban Noen Sawang - Thailand

Author

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Project summary

Geographical Site
Ban Noen Sawang
Thailand

Situation

Latitude	16.15 °N
Longitude	101.12 °E
Altitude	90 m
Time zone	UTC+7

Project settings
Albedo 0.20

Weather data
Ban Noen Sawang
Meteonorm 8.1 (1996-2015), Sat=100% - Synthetic

System summary

Grid-Connected System

No 3D scene defined, no shadings

PV Field Orientation
Fixed planes 2 orientations
Tilts/azimuths 20 / -25 °
20 / 155 °

Near Shadings
No Shadings

User's needs
Unlimited load (grid)

System information

PV Array

Nb. of modules	864 units
Pnom total	600 kWp

Inverters

Nb. of units	10 units
Pnom total	500 kWac
Pnom ratio	1.201

Results summary

Produced Energy	731477 kWh/year	Specific production	1218 kWh/kWp/year	Perf. Ratio PR	74.98 %

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General parameters

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

PV Field Orientation

Orientation		Sheds configuration	Models used	
Fixed planes	2 orientations	No 3D scene defined	Transposition	Perez
Tilts/azimuths	20 / -25 ° 20 / 155 °		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	CS7N-695TB-AG 1500V
(Original PVsyst database)	
Unit Nom. Power	695 Wp
Number of PV modules	864 units
Nominal (STC)	600 kWp
Modules	54 string x 16 In series
At operating cond. (50°C)	
Pmpp	557 kWp
U mpp	585 V
I mpp	952 A

Inverter

Manufacturer	Generic
Model	SUN2000-50KTL-M3-400V
(Original PVsyst database)	
Unit Nom. Power	50.0 kWac
Number of inverters	10 units
Total power	500 kWac
Operating voltage	200-1000 V
Max. power (=>35°C)	55.0 kWac
Pnom ratio (DC:AC)	1.20
Power sharing within this inverter	

Total PV power

Nominal (STC)	600 kWp
Total	864 modules
Module area	2684 m²

Total inverter power

Total power	500 kWac
Max. power	550 kWac
Number of inverters	10 units
Pnom ratio	1.20

Array losses

Array Soiling Losses
Loss Fraction 7.1 %

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. 10 mΩ
Loss Fraction 1.5 % at STC

LID - Light Induced Degradation
Loss Fraction 3.0 %

Module Quality Loss
Loss Fraction 2.0 %

Module mismatch losses
Loss Fraction 2.0 % at MPP

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	0.962	0.892	0.816	0.681	0.440	0.000

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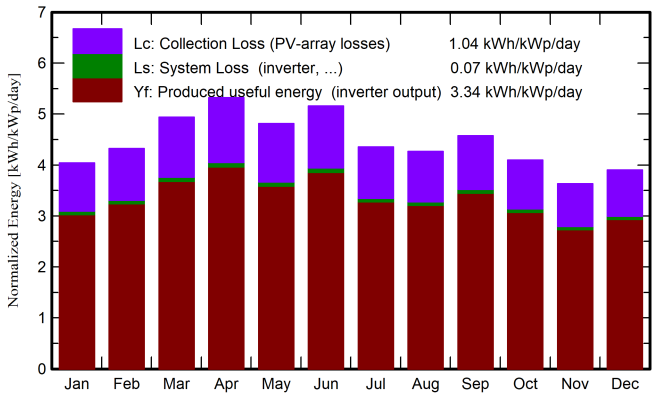
Main results

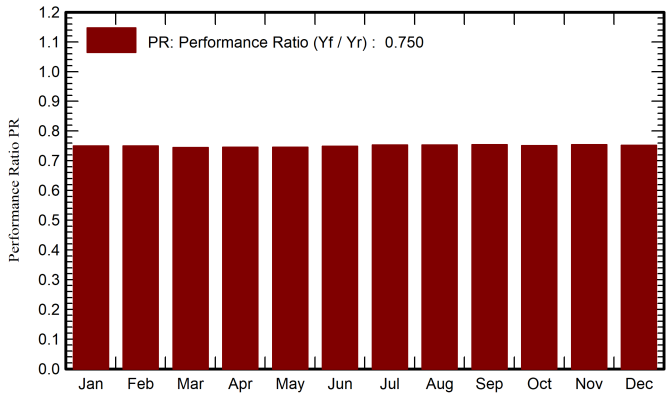
System Production

Produced Energy	731477 kWh/year	Specific production	1218 kWh/kWp/year
		Perf. Ratio PR	74.98 %

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 kWh	E_Grid kWh	PR ratio
January	129.6	57.53	24.75	125.3	112.4	57636	56407	0.750
February	125.4	70.59	26.97	121.0	109.2	55694	54504	0.750
March	158.9	88.64	29.15	153.2	138.9	70044	68502	0.745
April	165.7	92.19	29.92	159.7	145.0	73078	71462	0.745
May	155.3	84.75	29.33	149.2	135.2	68362	66854	0.746
June	160.8	78.68	28.43	154.7	140.2	71103	69532	0.749
July	140.4	88.22	28.19	135.1	122.1	62402	61072	0.753
August	137.5	78.98	27.68	132.2	119.8	61127	59791	0.753
September	142.7	82.60	27.18	137.3	124.2	63480	62115	0.754
October	131.9	74.78	27.63	127.0	114.8	58529	57259	0.751
November	113.1	69.12	26.24	108.9	97.9	50369	49316	0.754
December	125.2	63.02	24.96	121.0	108.4	55825	54662	0.752
Year	1686.6	929.10	27.54	1624.6	1468.0	747650	731477	0.750

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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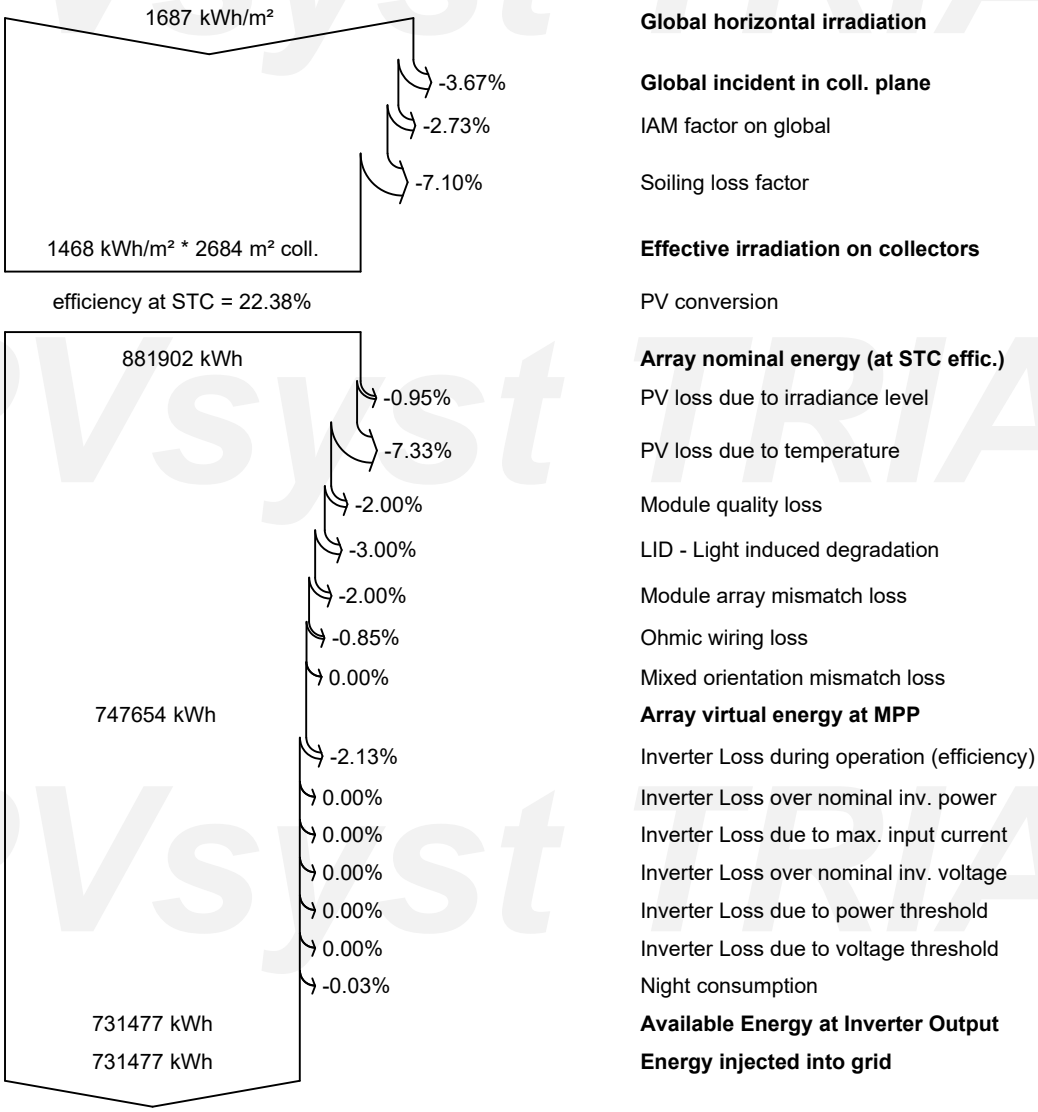
Loss diagram



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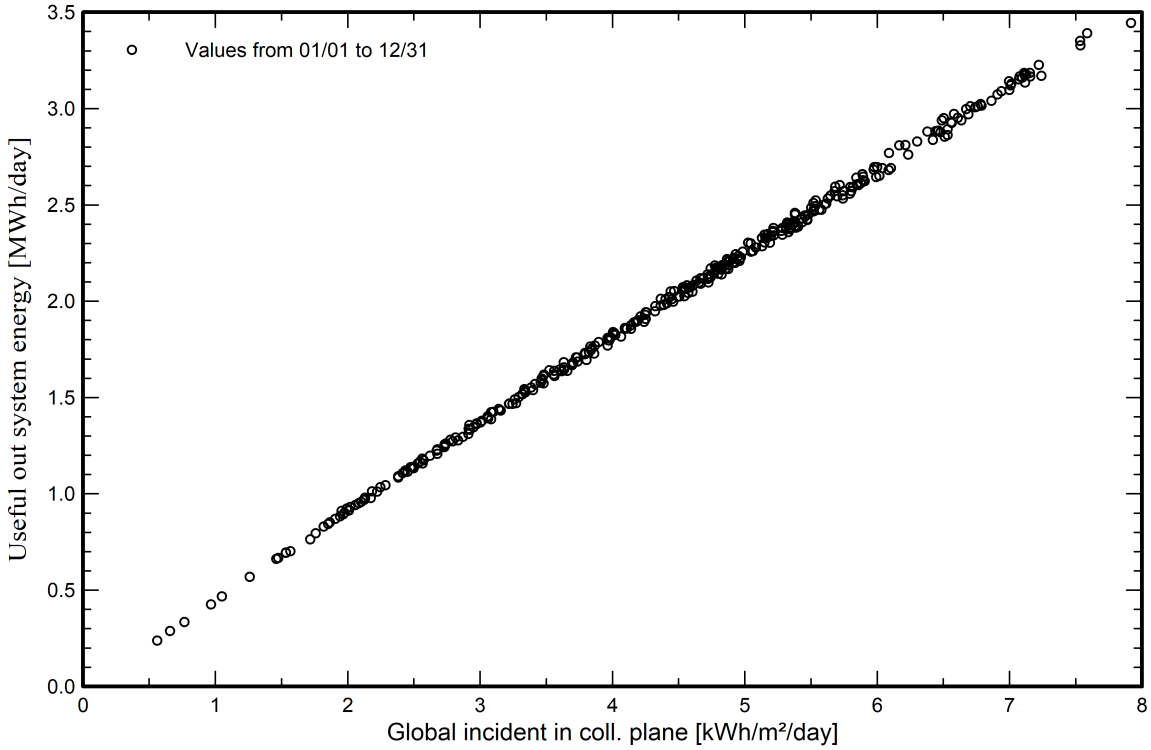
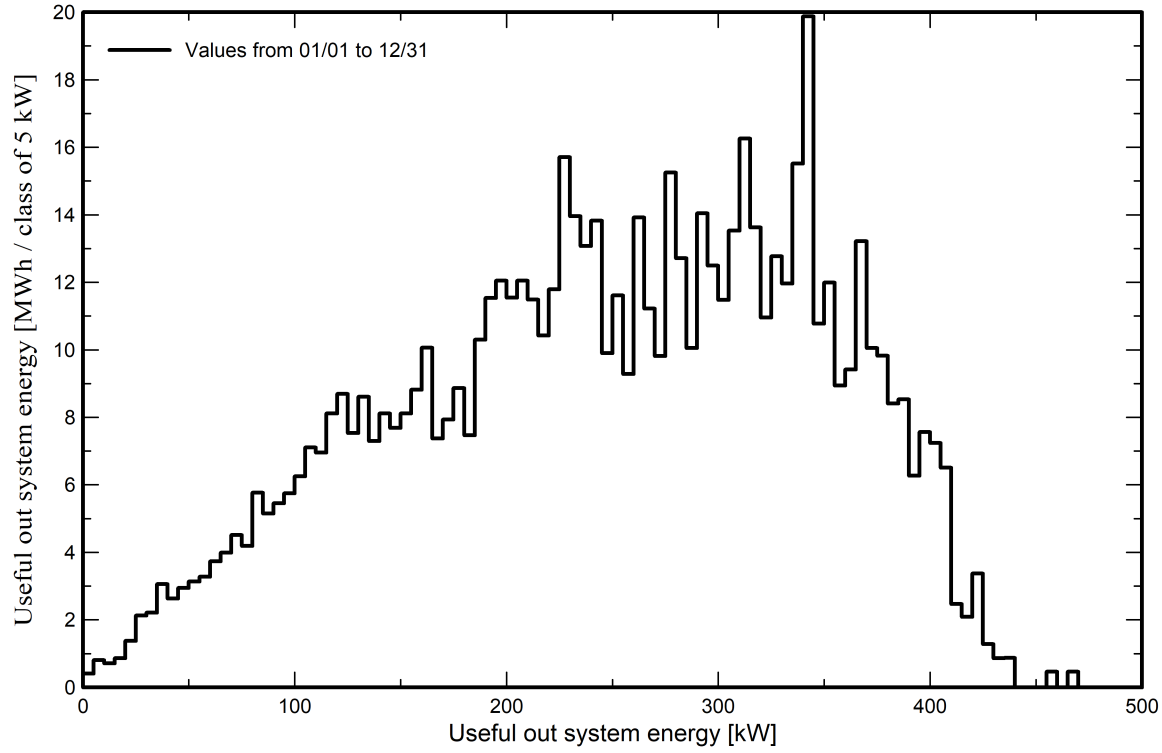
Predef. graphs

Daily Input/Output diagram



System Output Power Distribution



e-line diagram not avai