Version 7.4.6

PVsyst - Simulation report

Grid-Connected System

Project: Saha Farm

Variant: 03

No 3D scene defined, no shadings

System power: 1001 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	1440 units
Pnom total	1001 kWp

Inverters

Nb. of units	9 units
Pnom total	900 kWac
Pnom ratio	1.112

Results summary

Produced Energy	1219674 kWh/year	Specific production	1219 kWh/kWp/year	Perf. Ratio PR	75.01 %

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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	Near Shadings	User's needs
Free Horizon	No Shadings	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	1440 units
Nominal (STC)	1001 kWp
Modules	90 string x 16 In series
At operating cond. (50°C)	
Pmpp	928 kWp
U mpp	585 V
I mpp	1586 A

Inverter

Manufacturer	Generic
Model	SUN2000-100KTL-M1-400Vac
(Original PVsyst database)	
Unit Nom. Power	100 kWac
Number of inverters	9 units
Total power	900 kWac
Operating voltage	200-1000 V
Max. power (=>33°C)	110 kWac
Pnom ratio (DC:AC)	1.11
Power sharing within this inverter	

Total PV power

Nominal (STC)	1001 kWp
Total	1440 modules
Module area	4473 m²

Total inverter power

Total power	900 kWac
Max. power	990 kWac
Number of inverters	9 units
Pnom ratio	1.11

Array losses

Array Soiling Losses
Loss Fraction 7.3 %

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. 6.0 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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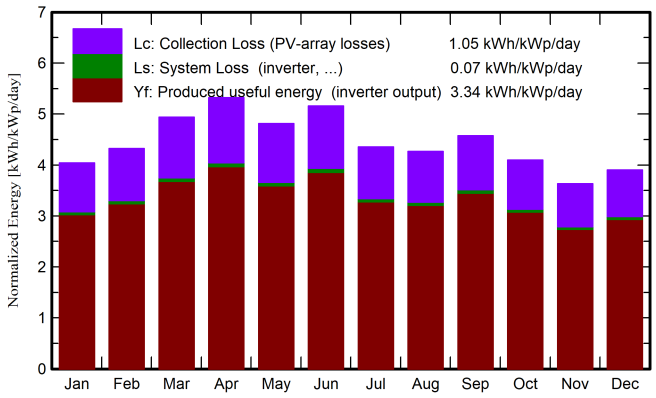
Main results

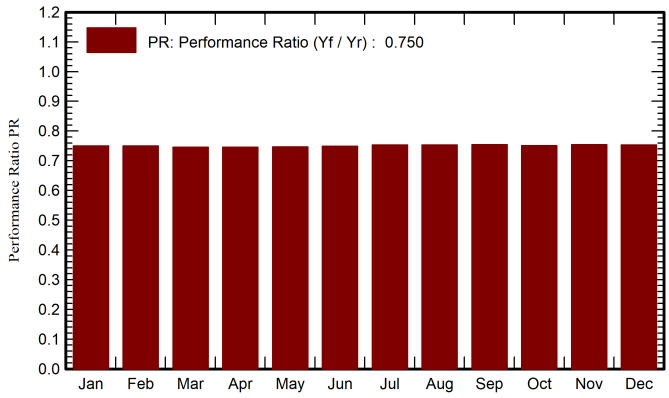
System Production

Produced Energy	1219674 kWh/year	Specific production	1219 kWh/kWp/year
		Perf. Ratio PR	75.01 %

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	112.2	95851	94047	0.750
February	125.4	70.59	26.97	121.0	109.0	92626	90876	0.750
March	158.9	88.64	29.15	153.2	138.6	116498	114237	0.745
April	165.7	92.19	29.92	159.7	144.7	121548	119174	0.746
May	155.3	84.75	29.33	149.2	134.9	113704	111484	0.746
June	160.8	78.68	28.43	154.7	139.9	118264	115946	0.749
July	140.4	88.22	28.19	135.1	121.8	103788	101820	0.753
August	137.5	78.98	27.68	132.2	119.5	101669	99693	0.753
September	142.7	82.60	27.18	137.3	124.0	105585	103570	0.754
October	131.9	74.78	27.63	127.0	114.5	97343	95474	0.751
November	113.1	69.12	26.24	108.9	97.7	83767	82219	0.754
December	125.2	63.02	24.96	121.0	108.2	92841	91135	0.753
Year	1686.6	929.10	27.54	1624.6	1464.9	1243484	1219674	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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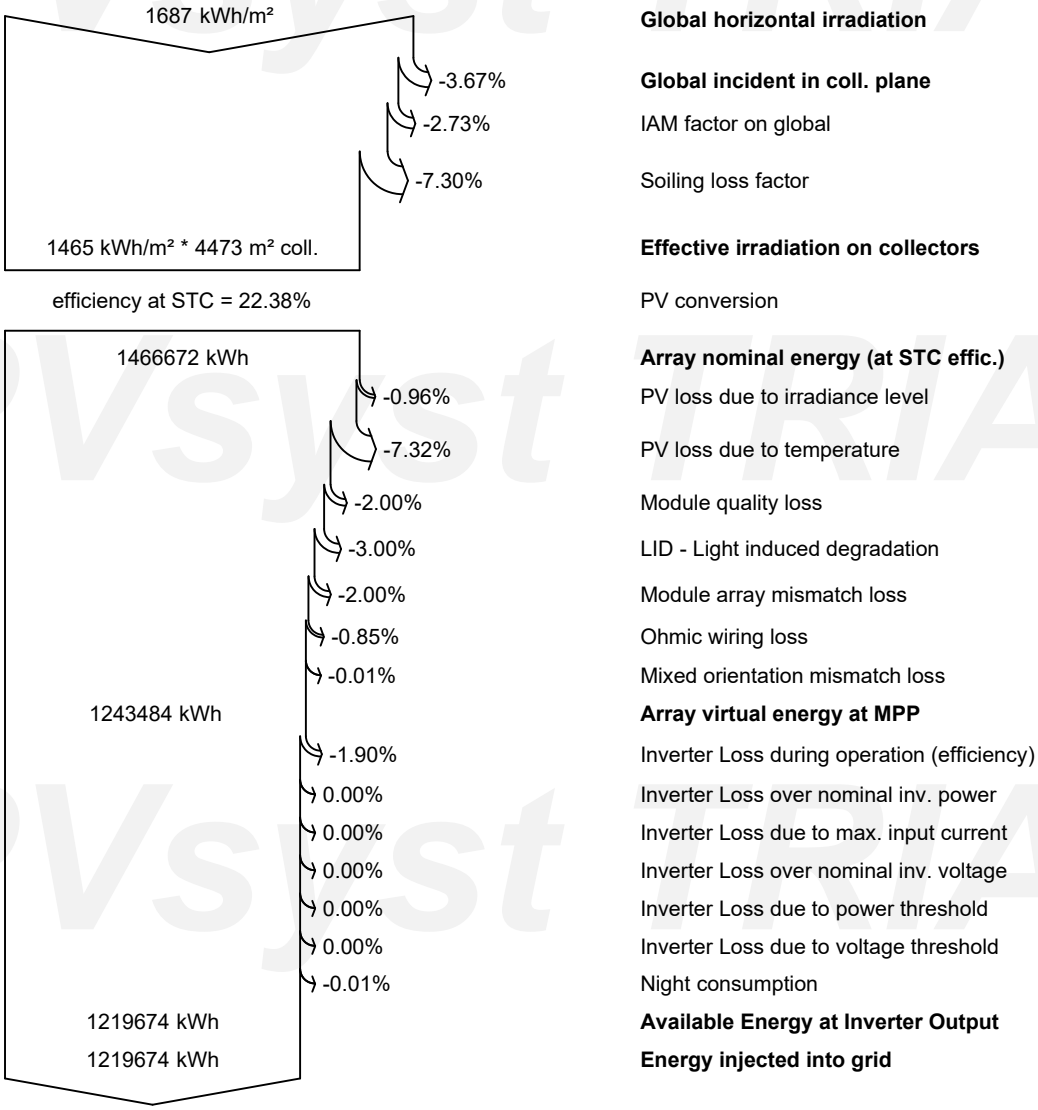
Loss diagram



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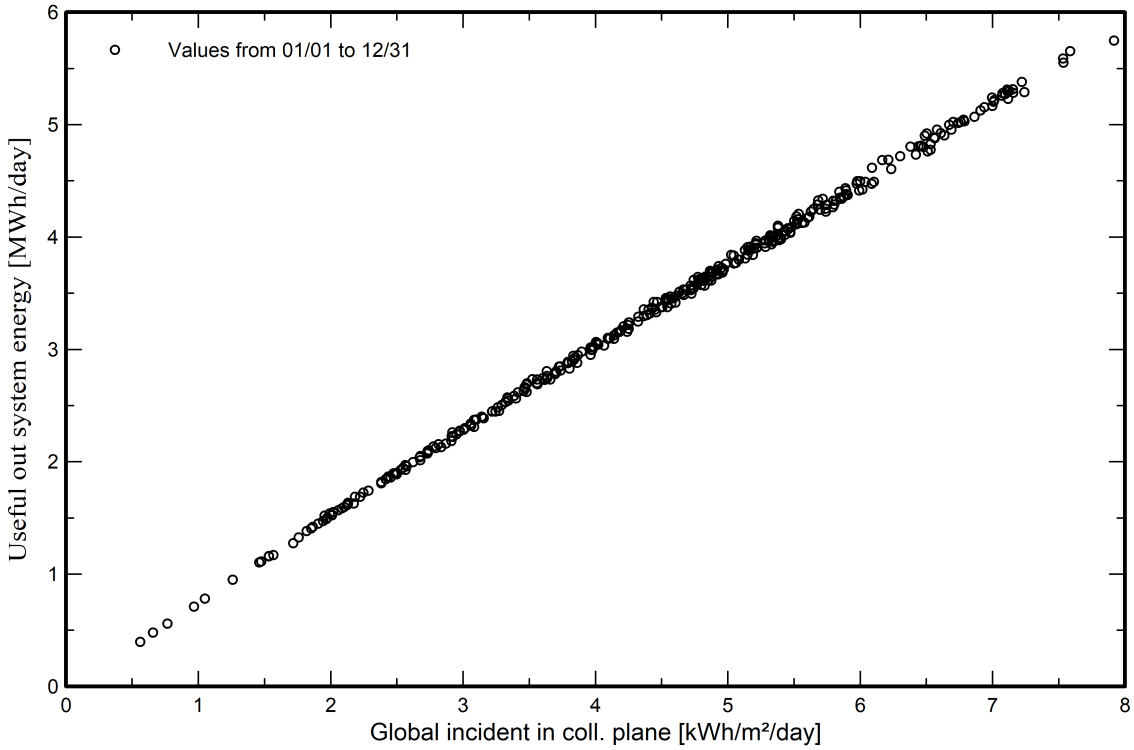
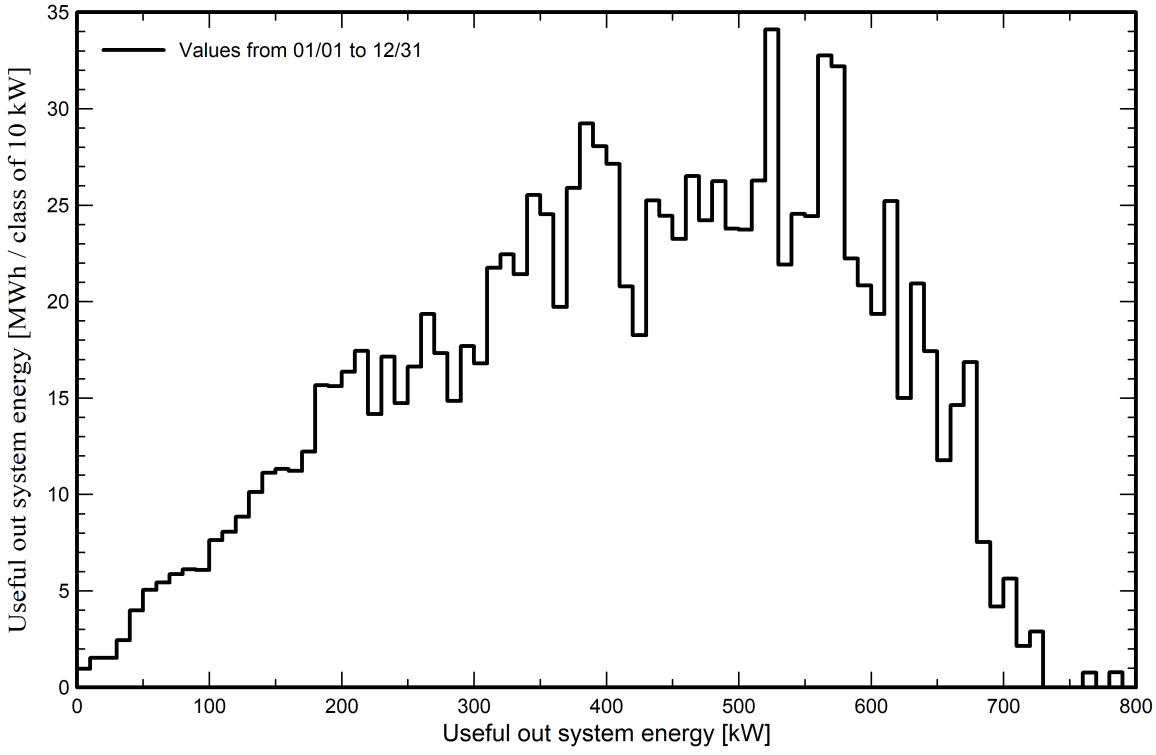
Predef. graphs

Daily Input/Output diagram



System Output Power Distribution



e-line diagram not avai