PVsyst - Simulation report

Grid-Connected System

Project: ikeja mall project

Variant: ikeja project 1

No 3D scene defined, no shadings

System power: 5.64 kWp

Ikeja - Nigeria

Author

PVsyst V8.0.20
VC4, Simulation date:
01/03/26 09:35
with V8.0.20

Project summary

Geographical Site
Ikeja
Nigeria

Situation

Latitude	6.60 °(N)
Longitude	3.35 °(E)
Altitude	33 m
Time zone	UTC+1

Project settings

Albedo	0.20

Weather data
Ikeja
Meteonorm 8.2, Sat=100% - Synthetic

System summary

Grid-Connected System

No 3D scene defined, no shadings

Orientation #1
Fixed plane
Tilt/Azimuth 15 / 0 °

Near Shadings
no Shadings

User's needs
Unlimited load (grid)

System information

PV Array

Nb. of modules	12 units
Pnom total	5.64 kWp

Inverters

Nb. of units	1 unit
Total power	5 kWac
Pnom ratio	1.13

Results summary

Produced Energy	8999.4 kWh/year	Specific production	1596 kWh/kWp/year	Perf. Ratio PR	83.78 %

Table of contents

Project and results summary 2
General parameters, PV Array Characteristics, System losses 3
Main results 4
Loss diagram 5
Predef. graphs 6
Single-line diagram 7

PVsyst V8.0.20
VC4, Simulation date:
01/03/26 09:35
with V8.0.20

General parameters

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

Orientation #1
Fixed plane
Tilt/Azimuth 15 / 0 °

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-470M-60HL4
(Original PVsyst database)	
Unit Nom. Power	470 Wp
Number of PV modules	12 units
Nominal (STC)	5.64 kWp
Modules	2 string x 6 In series
At operating cond. (50°C)	
Pmpp	5.15 kWp
U mpp	190 V
I mpp	27 A

Inverter

Manufacturer	Generic
Model	S6-GR1P5K-S
(Original PVsyst database)	
Unit Nom. Power	5.00 kWac
Number of inverters	1 unit
Total power	5.0 kWac
Operating voltage	90-550 V
Pnom ratio (DC:AC)	1.13
Power sharing within this inverter	

Total PV power

Nominal (STC)	6 kWp
Total	12 modules
Module area	25.9 m²
Cell area	23.8 m²

Total inverter power

Total power	5 kWac
Number of inverters	1 unit
Pnom ratio	1.13

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. 116 mΩ
Loss Fraction 1.50 % at STC

Module Quality Loss
Loss Fraction -0.75 %

Module mismatch losses
Loss Fraction 2.00 % 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	0.963	0.892	0.814	0.679	0.438	0.000

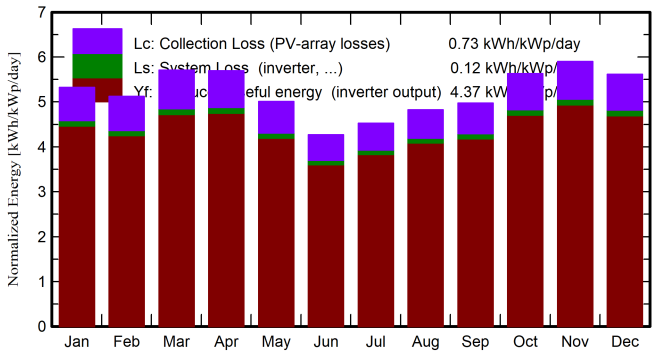
PVsyst V8.0.20
VC4, Simulation date:
01/03/26 09:35
with V8.0.20

Main results

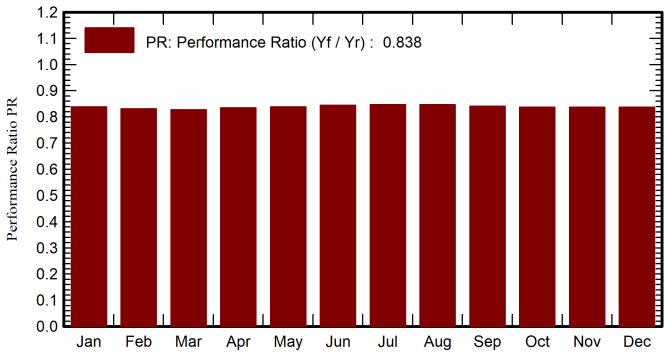
System Production

Produced Energy	8999.4 kWh/year	Specific production	1596 kWh/kWp/year
		Perf. Ratio PR	83.78 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

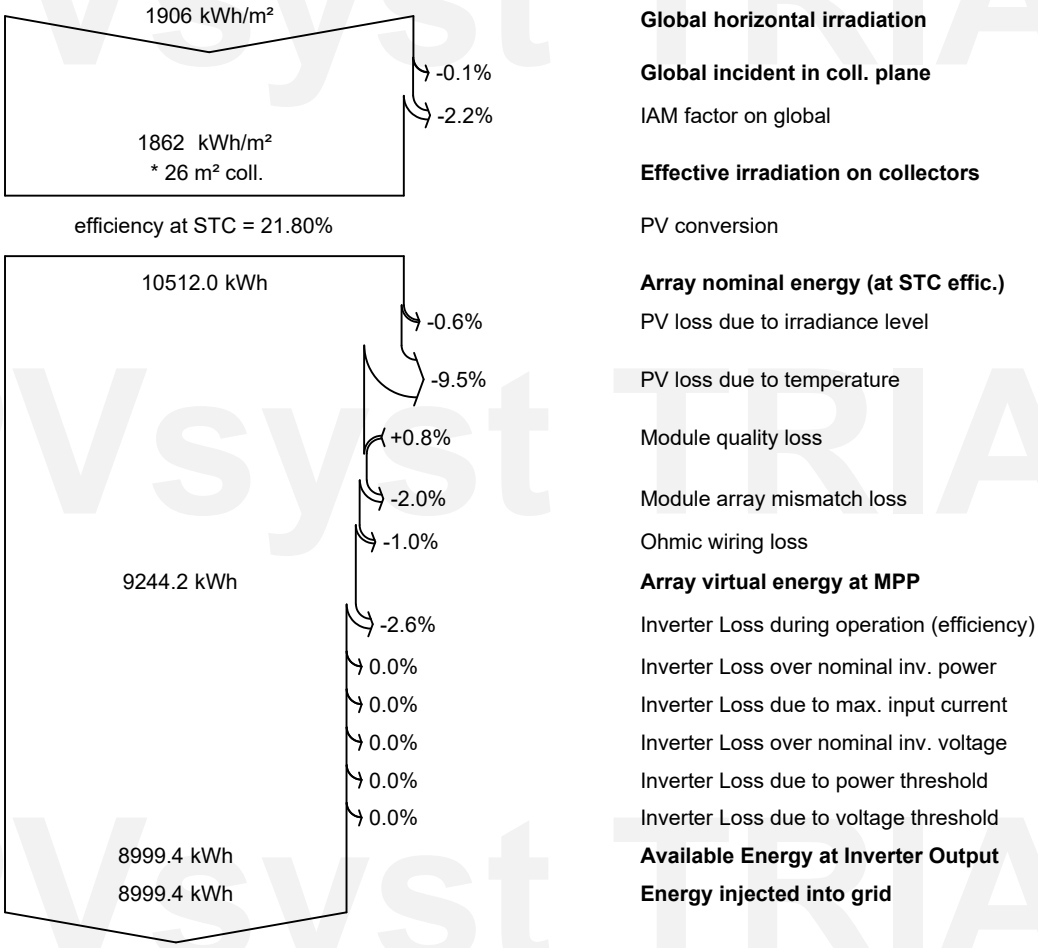
	GlobHor kWh/m²	DiffHor kWh/m²	T_Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray kWh	E_Grid kWh	PR ratio
January	152.7	91.6	27.54	165.1	162.1	802.4	781.2	0.839
February	137.9	90.5	28.55	143.4	140.7	690.4	671.6	0.830
March	175.7	101.9	29.10	176.9	173.7	848.4	825.7	0.828
April	177.7	94.0	28.27	170.9	167.1	825.8	804.1	0.834
May	168.0	91.0	27.79	155.3	151.2	754.4	734.5	0.838
June	141.6	75.8	26.02	128.2	124.2	627.0	609.9	0.844
July	153.9	86.0	25.93	140.4	136.0	688.4	670.0	0.846
August	158.3	87.3	25.49	149.7	145.7	734.5	714.9	0.847
September	151.7	77.3	25.55	149.2	145.6	726.9	707.4	0.841
October	167.9	82.5	26.58	174.5	170.9	845.2	823.1	0.837
November	162.5	81.1	27.19	177.0	173.6	857.6	835.6	0.837
December	157.7	85.1	27.79	174.0	170.8	843.3	821.4	0.837
Year	1905.7	1044.1	27.15	1904.5	1861.7	9244.2	8999.4	0.838

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

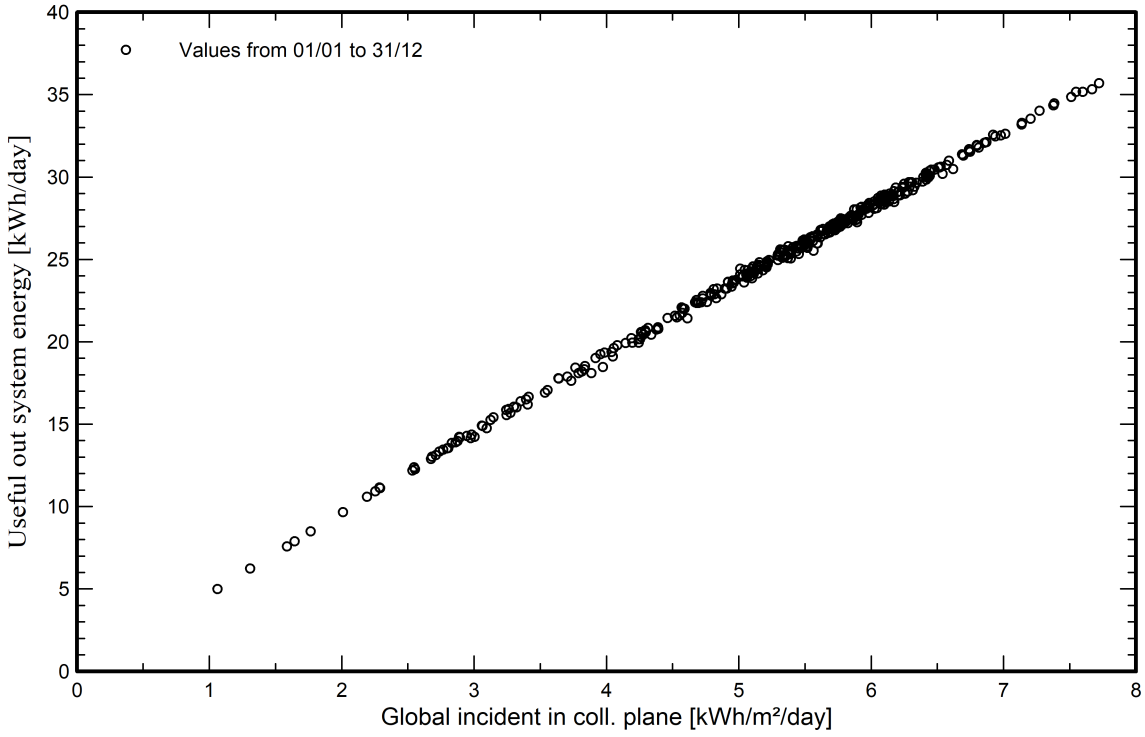
PVsyst V8.0.20
VC4, Simulation date:
01/03/26 09:35
with V8.0.20

Loss diagram

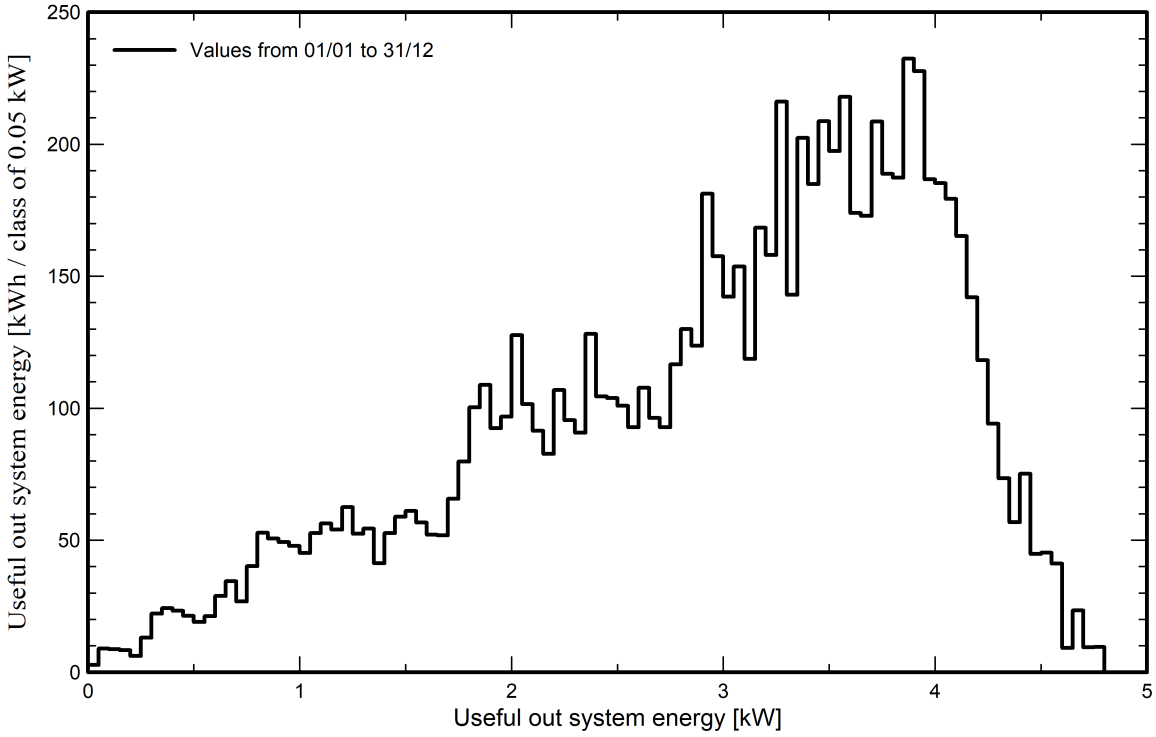


Predef. graphs

Daily Input/Output diagram

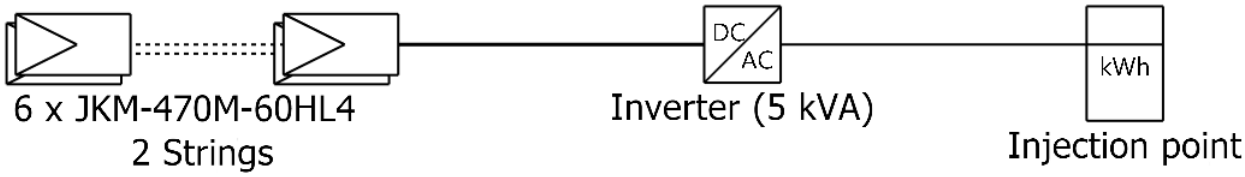


System Output Power Distribution



Single-line diagram

PVsyst V8.0.20
VC4, Simulation date:
01/03/26 09:35
with V8.0.20



PV module	JKM-470M-60HL4
Inverter	S6-GR1P5K-S
String	6 x JKM-470M-60HL4

	ikeja mall project	
	VC4 : ikeja project 1	01/03/26