PVSYST
PHOTOVOLTAIC SOFTWARE

PVsyst TRIAL

PVsyst - Simulation report

Grid-Connected System

Project: Meteo_TG_PVGIS

Variant: Nueva variante de simulación

No 3D scene defined, no shadings

System power: 11.05 MWp

Nuevo Horizonte - Colombia

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Author

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PVsyst V8.0.6
VC0, Simulation date:
21/01/25 19:14
with V8.0.6

Project summary

Geographical Site
Nuevo Horizonte
Colombia

Situation

Latitude	7.89 °N
Longitude	-72.56 °W
Altitude	239 m
Time zone	UTC-5

Project settings
Albedo 0.20

Weather data
Nuevo Horizonte_PVGIS
PVGIS api TMY

System summary

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

Orientation #1
Fixed plane
Tilt/Azimuth 20 / 0 °

Near Shadings
no Shadings

User's needs
Unlimited load (grid)

System information

PV Array		Inverters	
Nb. of modules	15680 units	Nb. of units	35 units
Pnom total	11.05 MWp	Pnom total	10.50 MWac
		Pnom ratio	1.053

Results summary

Produced Energy	17044 MWh/year	Specific production	1542 kWh/kWp/year	Perf. Ratio PR	84.38 %

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

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General parameters

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

Orientation #1
Fixed plane
Tilt/Azimuth 20 / 0 °

Sheds configuration
No 3D scene defined

Models used
Transposition Perez
Diffuse Imported
Circumsolar separate

Horizon
Free Horizon

Near Shadings
no Shadings

User's needs
Unlimited load (grid)

PV Array Characteristics

PV module

Manufacturer	Generic
Model	DS705
(Custom parameters definition)	
Unit Nom. Power	705 Wp
Number of PV modules	15680 units
Nominal (STC)	11.05 MWp
Modules	560 string x 28 In series
At operating cond. (50°C)	
Pmpp	10.34 MWp
U mpp	1046 V
I mpp	9891 A

Inverter

Manufacturer	Generic
Model	SUN2000-330KTL-H1
(Custom parameters definition)	
Unit Nom. Power	300 kWac
Number of inverters	35 units
Total power	10500 kWac
Operating voltage	500-1500 V
Max. power (=>30°C)	350 kWac
Pnom ratio (DC:AC)	1.05
Power sharing within this inverter	

Total PV power

Nominal (STC)	11054 kWp
Total	15680 modules
Module area	48708 m²

Total inverter power

Total power	10500 kWac
Max. power	12250 kWac
Number of inverters	35 units
Pnom ratio	1.05

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. 1.7 mΩ
Loss Fraction 1.5 % at STC

Module Quality Loss
Loss Fraction 2.0 %

Module mismatch losses
Loss Fraction 2.0 % at MPP

Strings Mismatch loss
Loss Fraction 0.1 %

IAM loss factor
Incidence effect (IAM): Fresnel smooth glass, n = 1.526

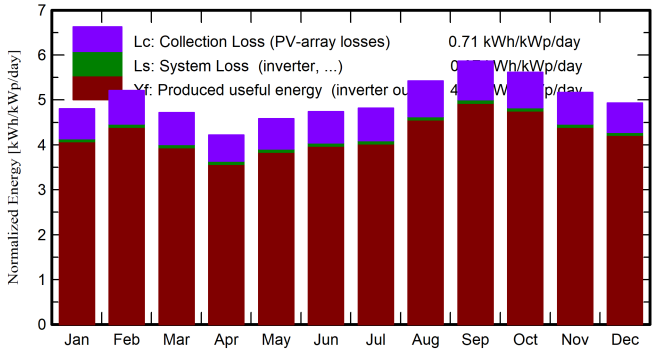
0°	30°	50°	60°	70°	75°	80°	85°	90°
1.000	0.998	0.981	0.948	0.862	0.776	0.636	0.402	0.000

Main results

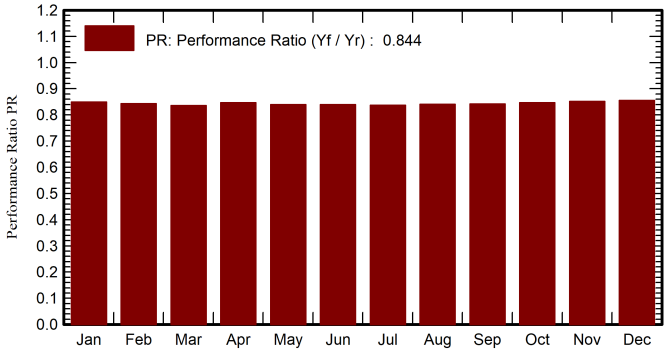
System Production

Produced Energy	17044 MWh/year	Specific production	1542 kWh/kWp/year
		Perf. Ratio PR	84.38 %

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	132.6	67.09	21.42	148.8	144.8	1420	1396	0.849
February	136.7	71.86	23.66	146.0	142.5	1383	1361	0.844
March	146.7	87.31	25.77	146.3	142.1	1375	1352	0.836
April	133.9	87.63	22.53	126.7	122.4	1208	1185	0.846
May	158.8	87.55	24.00	142.0	136.8	1342	1317	0.839
June	164.3	81.88	23.81	142.1	136.2	1342	1318	0.839
July	170.2	86.94	24.26	149.3	143.3	1406	1381	0.837
August	182.9	78.03	24.48	168.1	163.2	1587	1562	0.841
September	179.4	83.04	23.95	175.9	170.9	1662	1637	0.842
October	166.7	89.43	23.60	174.2	170.1	1656	1631	0.847
November	142.0	76.07	21.97	155.0	151.5	1483	1459	0.851
December	135.1	69.06	20.13	152.8	149.3	1469	1445	0.855
Year	1849.2	965.92	23.30	1827.1	1773.2	17333	17044	0.844

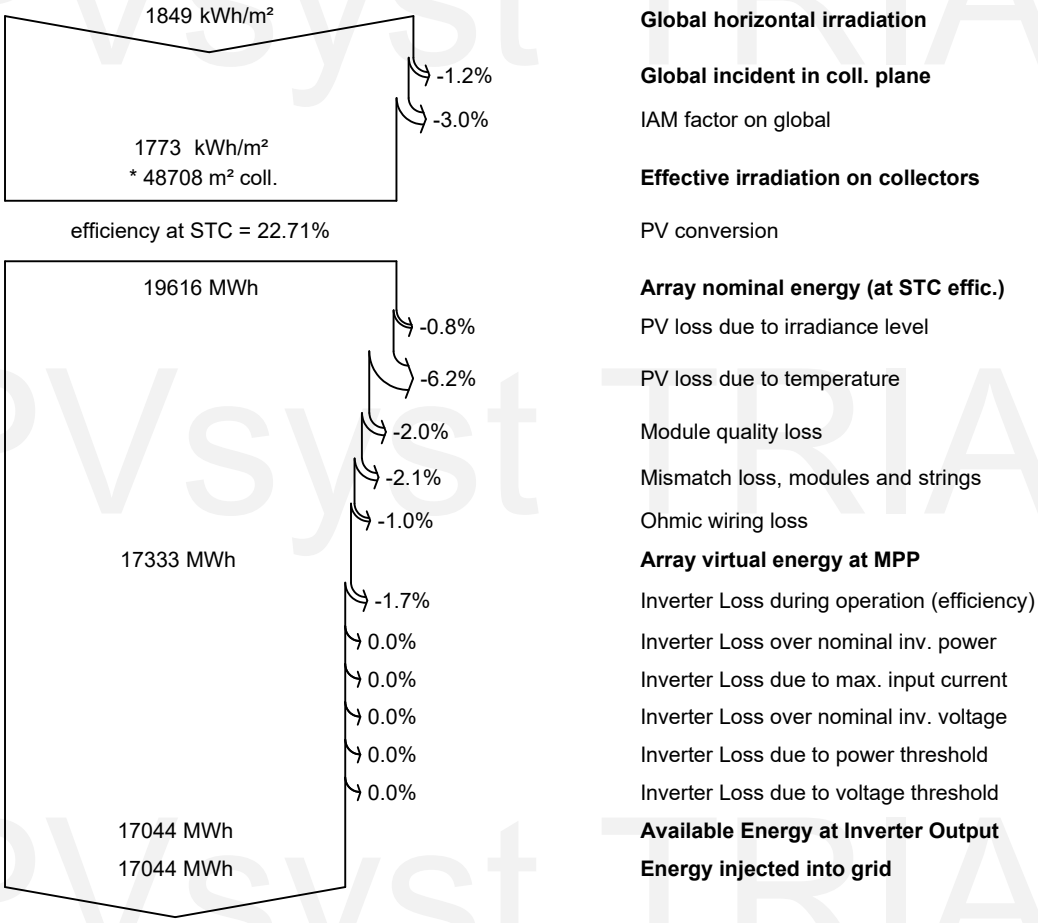
Legends

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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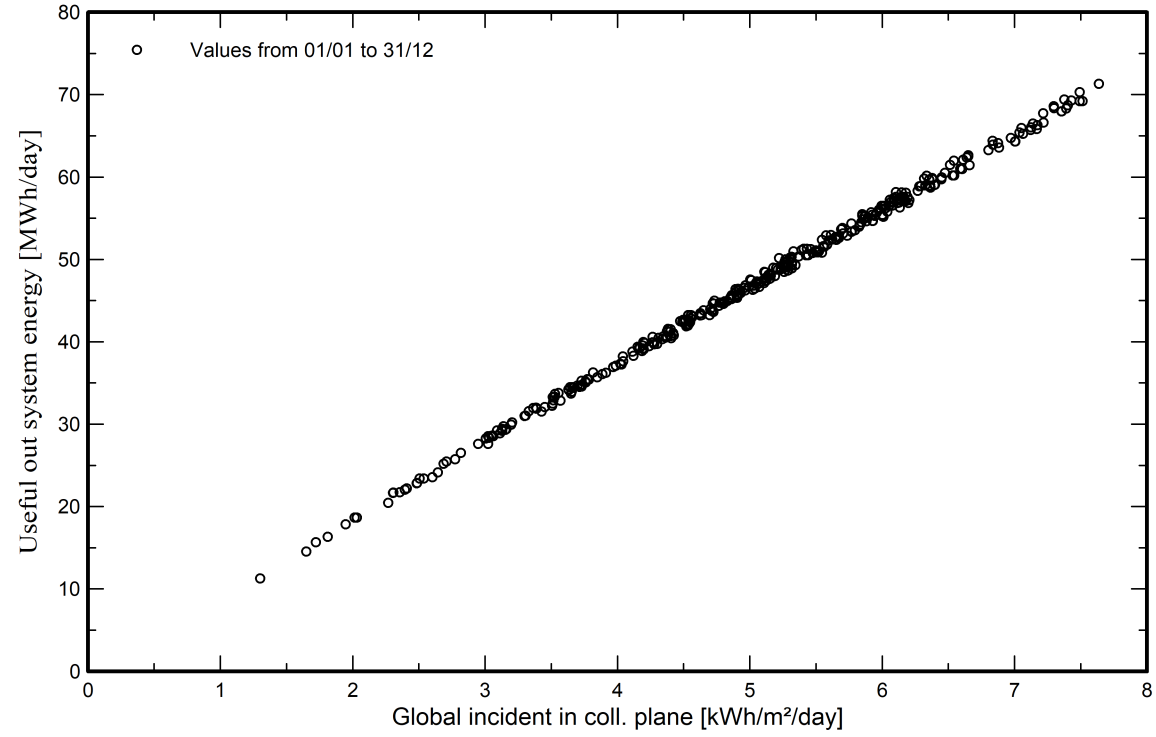
Loss diagram



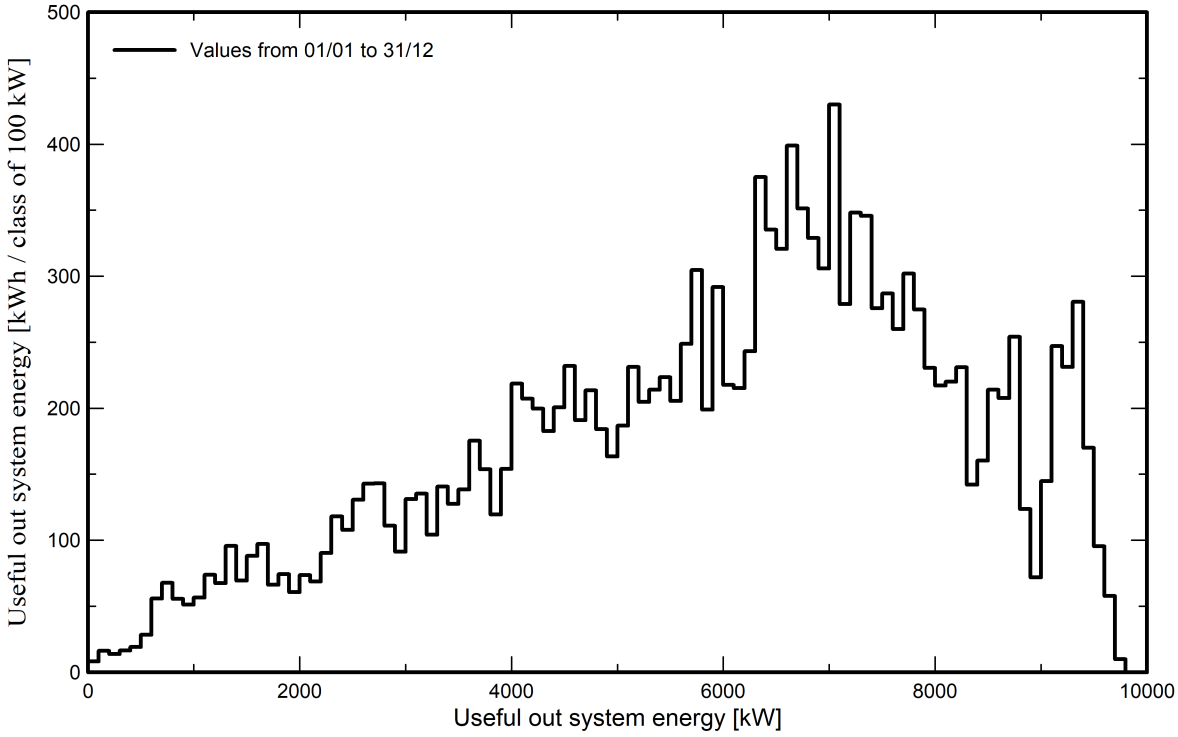
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Predef. graphs

Diagrama entrada/salida diaria

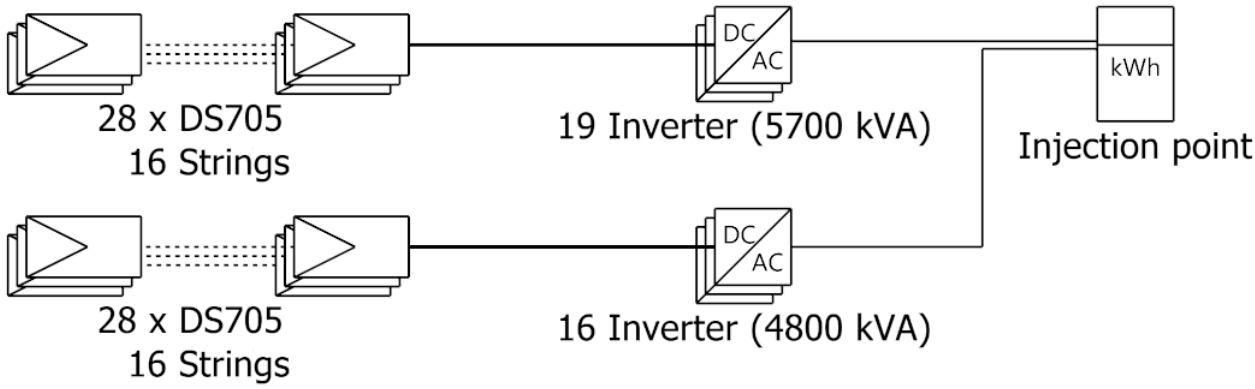


Distribución de potencia de salida del sistema



Single-line diagram

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PV module	DS705
Inverter	SUN2000-330KTL-H1
String	28 x DS705

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