PVSYST
PHOTOVOLTAIC SOFTWARE

PVsyst TRIAL

PVsyst - Simulation report

Grid-Connected System

Project: Meteo_TG_NREL

Variant: Nueva variante de simulación

No 3D scene defined, no shadings

System power: 11.05 MWp

Nuevo Horizonte - Colombia

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PVsyst V8.0.6
VC0, Simulation date:
21/01/25 20:54
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_NREL
NREL NSRDB Typ. Met. Year PSMv3_1998 to 2020 - TMY

System summary

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

Orientation #1
Fixed plane
Tilt/Azimuth 14 / 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	17846 MWh/year	Specific production	1614 kWh/kWp/year	Perf. Ratio PR	82.82 %

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General parameters

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

Orientation #1
Fixed plane
Tilt/Azimuth 14 / 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

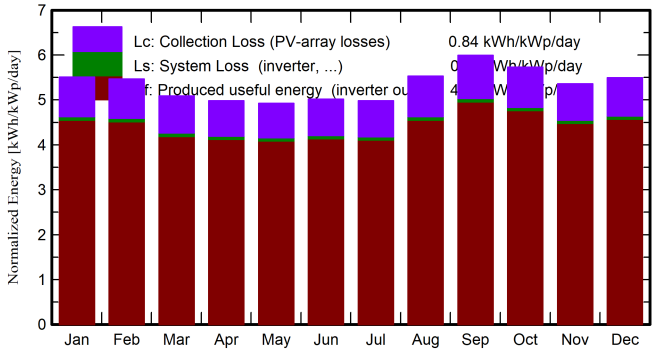
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Main results

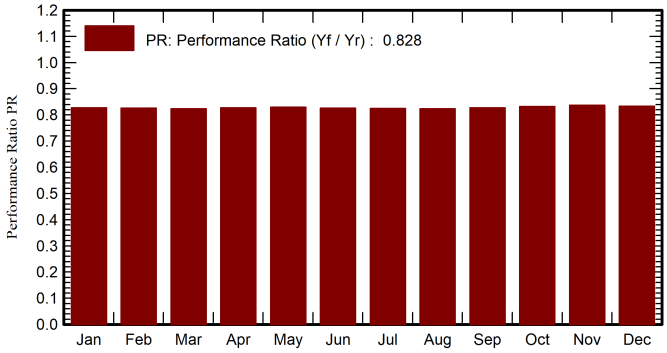
System Production

Produced Energy	17846 MWh/year	Specific production	1614 kWh/kWp/year
		Perf. Ratio PR	82.82 %

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	154.5	64.55	27.53	170.8	166.4	1588	1562	0.827
February	144.5	68.26	27.73	153.1	149.1	1422	1399	0.826
March	155.5	84.76	28.90	157.8	153.9	1463	1436	0.823
April	154.9	87.83	28.61	149.5	145.1	1392	1368	0.827
May	163.5	89.58	27.82	152.8	147.7	1426	1401	0.830
June	165.3	73.65	27.88	150.5	145.1	1398	1373	0.826
July	168.4	72.92	28.37	154.5	149.1	1434	1409	0.825
August	180.8	77.27	28.66	171.5	166.0	1588	1562	0.824
September	180.6	75.28	28.19	179.9	175.3	1671	1645	0.827
October	170.3	78.29	27.59	177.7	173.4	1659	1635	0.832
November	148.0	70.29	26.28	160.8	156.6	1510	1487	0.837
December	152.2	63.32	26.68	170.3	165.8	1593	1569	0.834
Year	1938.4	906.02	27.86	1949.2	1893.4	18142	17846	0.828

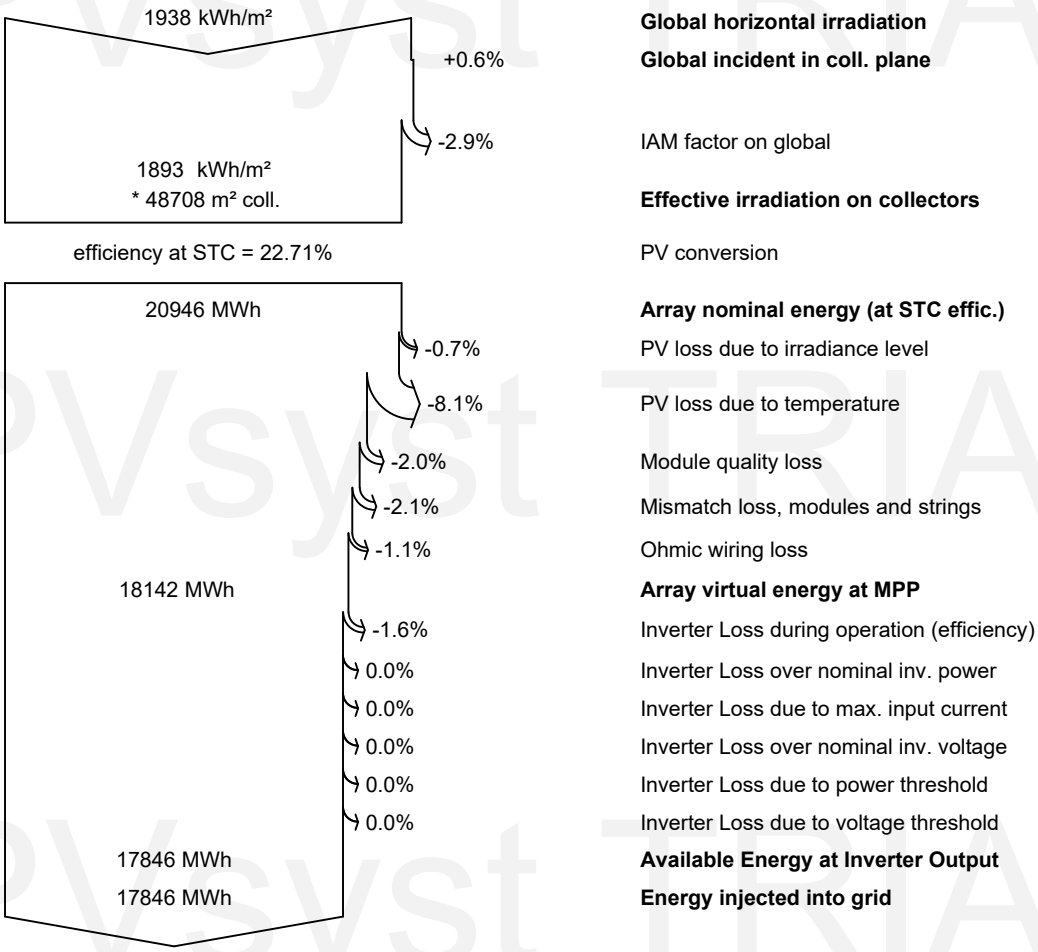
Legends

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

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Loss diagram

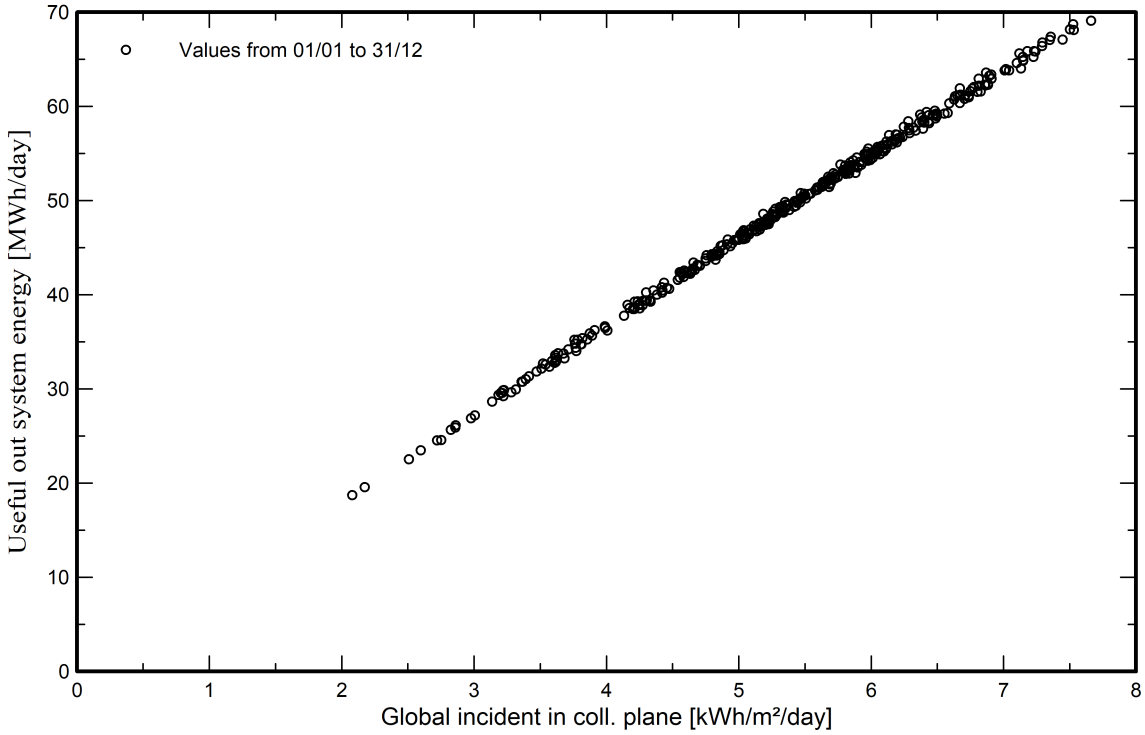


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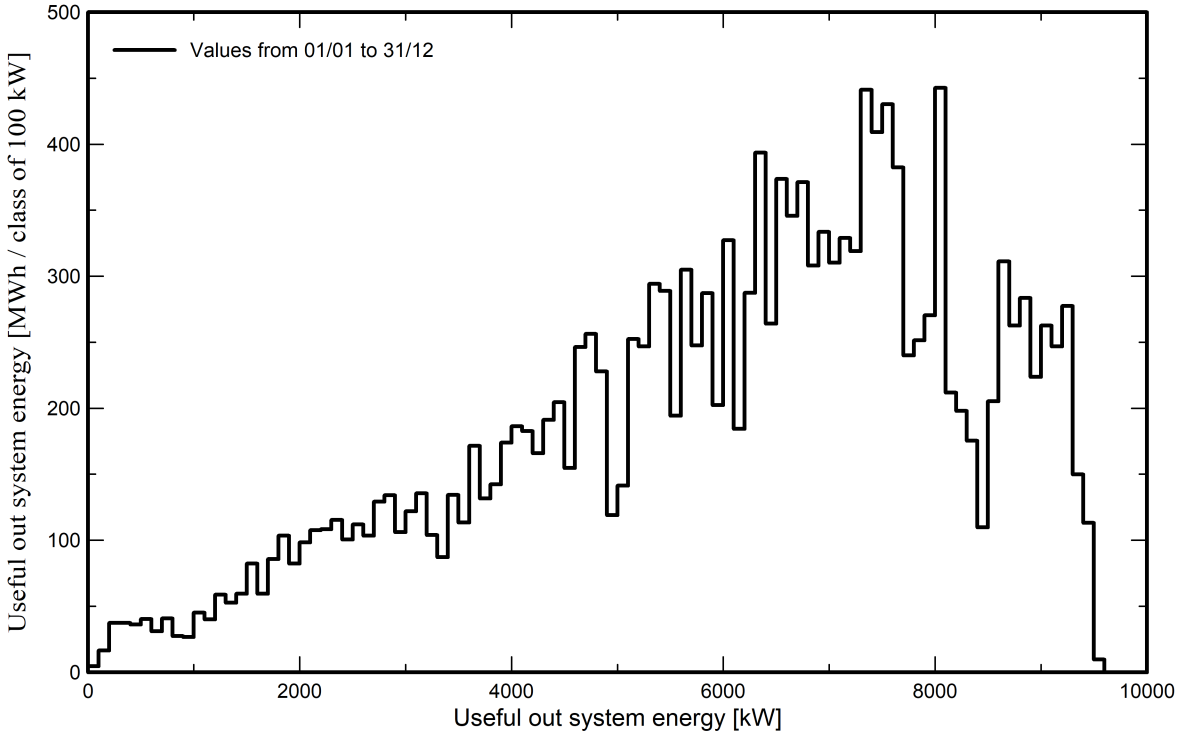
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Predef. graphs

Diagrama entrada/salida diaria



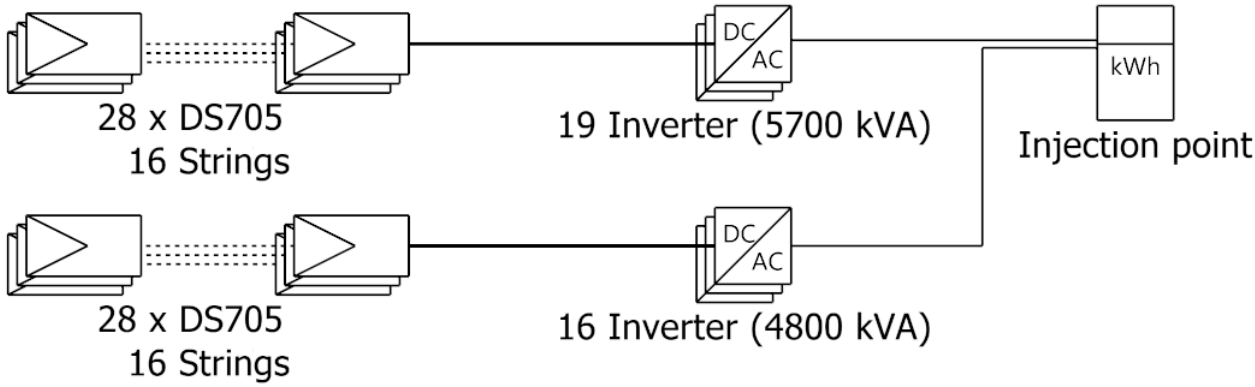
Distribución de potencia de salida del sistema



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Single-line diagram

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

	Meteo_TG_NREL	
	VC0 : Nueva variante de simulación	21/01/25