

PVsyst - Simulation report

Grid-Connected System

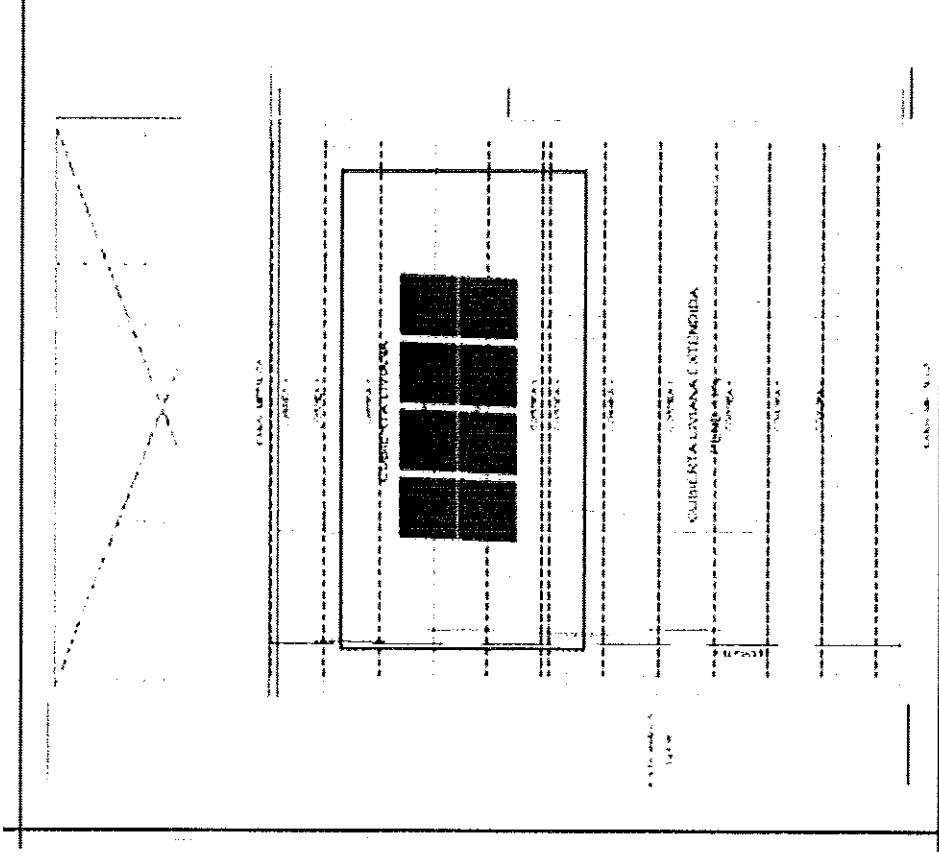
Proyecto: CREACIONES MONACHITOS SAS Evento148176

Variant: Creaciones Monachitos

Sin escena 3D definida, sin sombras, Localidad Antonio Nariñ

System power: 2400 Wp

Santiago Pérez - Colombia



JULIO DARÍO FUENTES
GIMECOL SOLAR (Colombia)



Gimecol Solar



Project: GRUPO LÍNEA BARBARELLA Evento148176

Variant: Creaciones Monachitos

GIMECOL SOLAR (Colombia)

PVsyst V7.3.2

VC3, Simulation date:
14/04/23 11:21
with v7.3.2

Project summary

Geographical Site		Situation		Project settings	
Santiago Pérez		Latitude	4.59 °N	Albedo	0.20
Colombia		Longitude	-74.11 °W		
		Altitude	2585 m		
		Time zone	UTC-5		
Meteo data					
Santiago Pérez					
Meteonorm 8.1 (2016-2021), Sat=100% - Sintético					

System summary

Grid-Connected System		Sin escena 3D definida, sin sombras, Localidad Antonio Nariñ	
PV Field Orientation		Near Shadings	
Fixed plane		No Shadings	
Tilt/Azimuth		15 / 45 °	
System information			
PV Array		Inverters	
Nb. of modules		6 units	
Prom total		2400 Wp	
		Nb. of units	
		Prom total	
		Prom ratio	
		6 units	
		1740 W	
		1.379	

Results summary

Produced Energy	3420.44 kWh/year	Specific production	1425 kWh/kWp/year	Perf. Ratio PR	83.80 %
Used Energy	3215.00 kWh/year			Solar Fraction SF	39.55 %

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PVsyst V7.3.2

VC3. Simulation date:

14/04/23 11:21

with V7.3.2

GIMECOL SOLAR (Colombia)

General parameters

Grid-Connected System

Sin escena 3D definida, sin sombras, Localidad Antonio Nariño

PV Field Orientation

Orientation

Fixed plane

Tilt/Azimuth

15 / 45 °

Sheds configuration

No 3D scene defined

Models used

Transposition

Diffuse

Perez, Meteonorm

Circumsolar

separate

Horizon

Free Horizon

Near Shadings

No Shadings

User's needs

Monthly values

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
210	280	285	200	205	210	200	205	250	560	320	290	3215 kWh/mth

PV Array Characteristics

PV module

Manufacturer

Model

JA solar

JAM72-S03-400-PR

Inverter

Manufacturer

Model

Enphase

IQ7PLUS-72-x-208

(Original PVsyst database)

Unit Nom. Power

Number of PV modules

Nominal (STC)

Modules

400 Wp

6 units

2400 Wp

6 Strings x 1 In series

At operating cond. (50°C)

Pmpp

U mpp

I mpp

2184 Wp

37 V

59 A

(Original PVsyst database)

Unit Nom. Power

Number of inverters

Total power

Operating voltage

Max. power ($\Rightarrow 60^{\circ}\text{C}$)

Phom ratio (DC:AC)

0.290 kWac

6 units

1.7 kWac

16-48 V

0.300 kWac

1.38

Total PV power

Nominal (STC)

Total

Module area

Cell area

2.40 kWp

6 modules

12.0 m²10.8 m²

Total inverter power

Total power

Max. power

Number of inverters

Phom ratio

1.7 kWac

1.8 kWac

6 units

1.38

Array losses

Thermal Loss factor

Module temperature according to irradiance

Uc (const)

Uv (wind)

Global array res.

Loss Fraction

10 mQ

1.5 % at STC

Module Quality Loss

Loss Fraction

-0.8 %

Module mismatch losses

Loss Fraction

0.0 % 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	0.403	0.000



Project: GRUPO LÍNEA BARBARELLA Evento148176

Variant: Creaciones Monachitos

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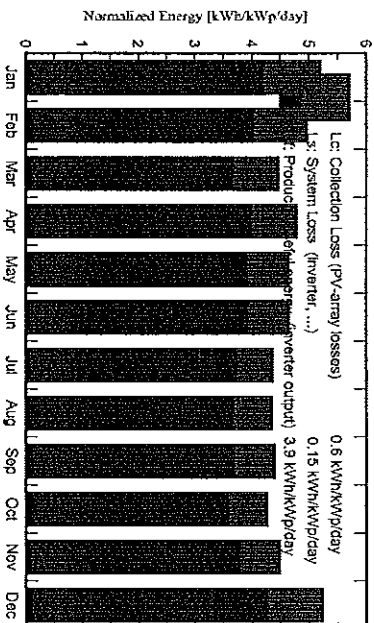
Main results

System Production

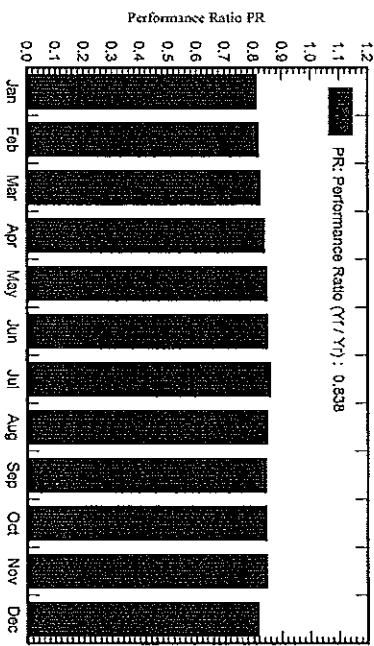
Produced Energy 3420.44 kWh/year
Used Energy 3215.00 kWh/year

Specific production 1425 kWh/kWp/year
Performance Ratio PR 83.80 %
Solar Fraction SF 39.55 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

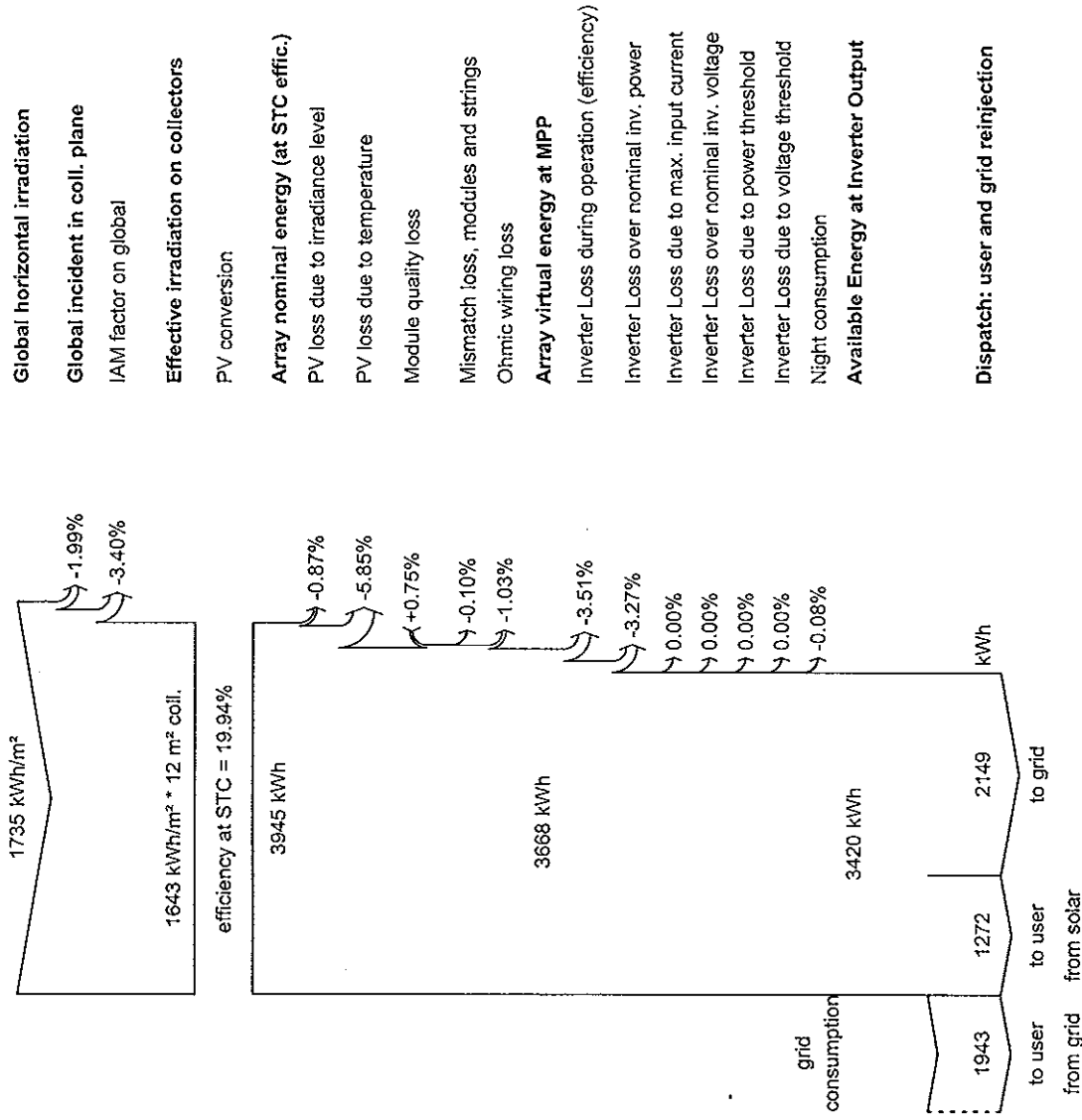
	GlobHor	DiffHor	T_Amb	GlobInc	GlobEff	EArray	E_User	E_Solar	E_Grid	EFrGrid
	kWh/m²	kWh/m²	°C	kWh/m²	kWh/m²	kWh	kWh	kWh	kWh	kWh
January	153.1	66.82	13.20	161.6	156.7	327.5	210.0	85.7	229.7	124.3
February	134.1	54.79	13.51	139.3	135.2	284.8	280.0	109.6	164.5	170.4
March	140.4	68.68	13.75	139.1	134.4	286.3	285.0	113.8	161.8	171.2
April	149.7	65.85	13.78	143.8	139.2	300.7	200.0	84.4	205.1	115.6
May	156.4	66.82	13.95	144.2	138.9	305.1	205.0	86.1	207.7	118.9
June	152.9	64.20	13.49	139.7	134.0	295.9	210.0	91.3	193.6	118.7
July	148.6	67.87	13.58	135.5	129.8	290.7	200.0	85.5	194.4	114.5
August	146.3	77.54	13.51	135.2	129.9	286.3	205.0	87.4	188.3	117.6
September	135.6	67.51	13.18	132.1	128.0	278.2	250.0	102.2	165.6	147.8
October	132.6	78.29	13.44	132.8	128.4	279.9	560.0	188.6	81.0	371.4
November	132.6	68.57	13.40	135.1	130.6	285.3	320.0	120.9	153.9	199.1
December	153.2	65.76	13.37	162.5	157.8	331.4	290.0	116.0	203.3	174.0
Year	1735.4	812.69	13.51	1700.8	1642.9	3552.0	3215.0	1271.6	2148.8	1943.4

Legends

GlobHor	Global horizontal irradiation	EArray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	E_User	Energy supplied to the user
T_Amb	Ambient Temperature	E_Solar	Energy from the sun
GlobInc	Global incident in coll. plane	E_Grid	Energy injected into grid
GlobEff	Effective Global, corr. for IAM and shadings	EFrGrid	Energy from the grid



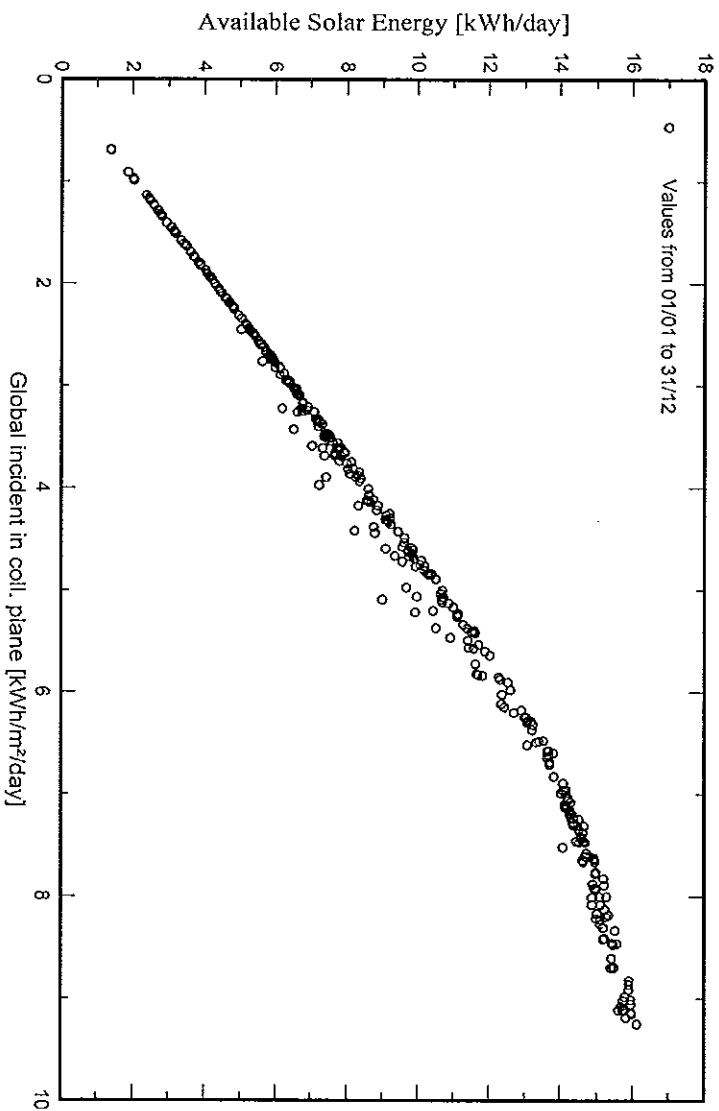
Loss diagram



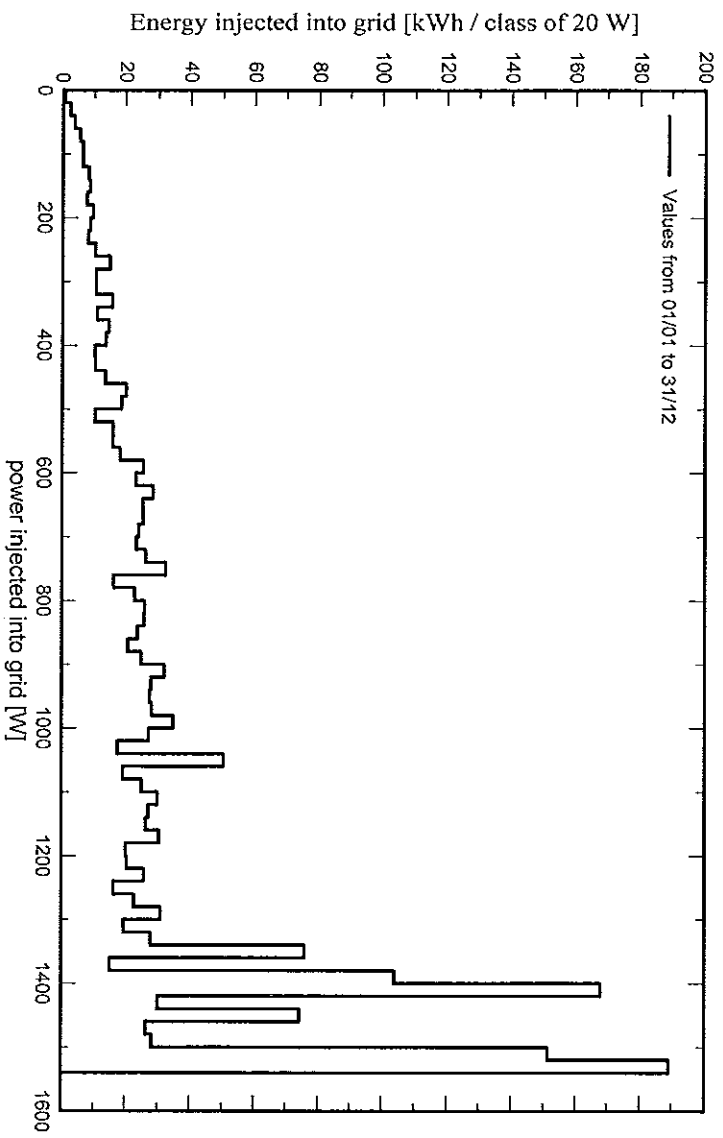


Prefef. graphs

Diagrama entrada/salida diaria



Distribución de potencia de salida del sistema





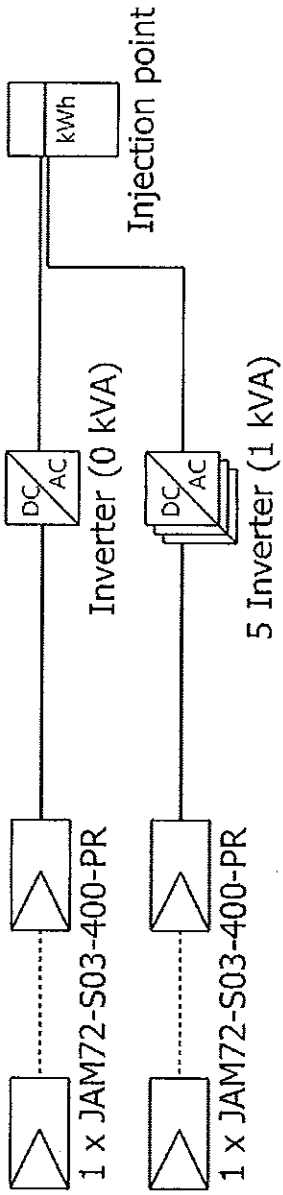
PVsyst V7.3.2

VC3, Simulation date:

14/04/23 11:21

with v7.3.2

Single-line diagram



3	PV module	JAM72-S03-400-PR
	Inverter	IQ7PLUS-72-x-208
	String	1 x JAM72-S03-400-PR
2	GRUPO LÍNEA BARBARELLA Eve nto148176	
1	VC3 : Creaciones Monachitos	
1	GIMECOL SOLAR (Colombia)	
1	14/04/23	

PVsyst - Simulation report

Grid-Connected System

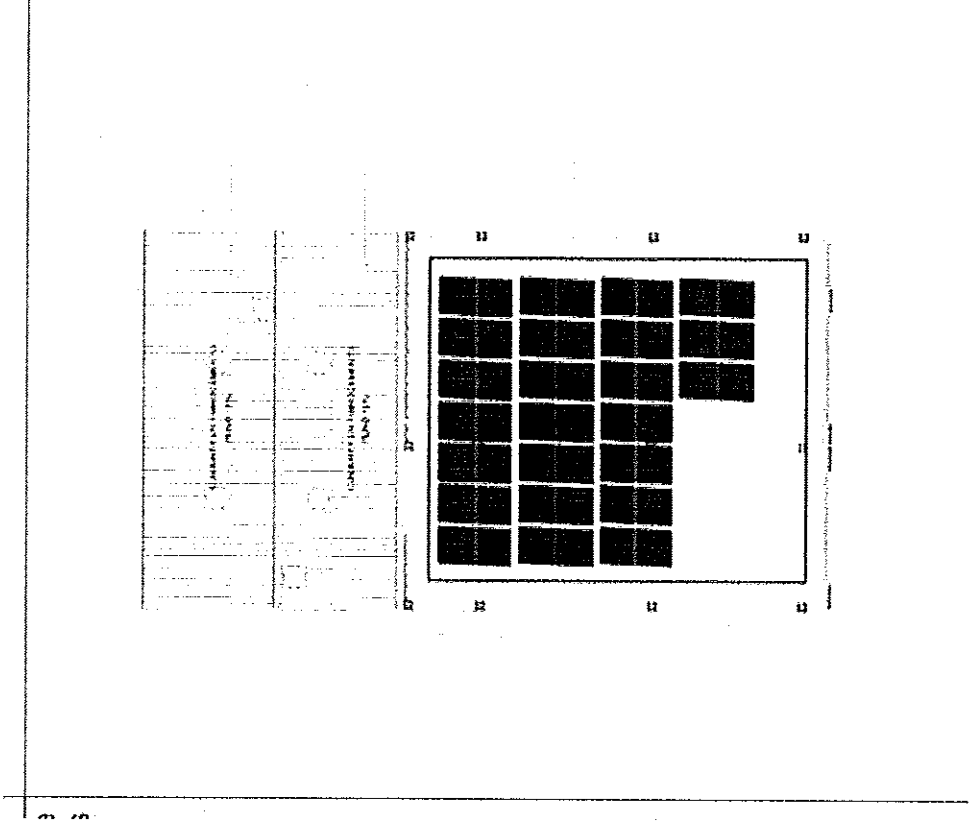
Project: GRUPO LÍNEA BARBARELLA Evento148176

Variant: Grupo Línea Barbarella sas

Sin escena 3D definida, sin sombras, localidad Antonio Nariñ

System power: 13.20 kWp

Santiago Pérez - Colombia



JULIO DARÍO FUENTES
GIMECOL SOLAR (Colombia)



Gimecol Solar



Project: GRUPO LÍNEA BARBARELLA Evento148176

Variant: Grupo Línea Barbarella sas

GIIMECOL SOLAR (Colombia)

PVsyst V7.3.2

V02, Simulation date:
14/04/23 10:45
with V7.3.2

Project summary

Geographical Site		Situation		Project settings	
Santiago Pérez		Latitude	4.59 °N	Albedo	0.20
Colombia		Longitude	-74.11 °W		
		Altitude	2585 m		
		Time zone	UTC-5		
Meteo data					
Santiago Pérez					
Meteonorm 8.1 (2016-2021), Sat=100% - Sintético					

System summary

Grid-Connected System		Sin escena 3D definida, sin sombras, localidad Antonio Nariñ			
PV Field Orientation		Near Shadings		User's needs	
Fixed plane		No Shadings		Monthly values	
Tilt/Azimuth	15 / 45 °				
System information					
PV Array		Inverters			
Nb. of modules	33 units	Nb. of units	33 units		
Pnom total	13.20 kWp	Pnom total	9.57 kWac		
		Pnom ratio	1.379		

Results summary

Produced Energy	18812.94 kWh/year	Specific production	1425 kWh/kWp/year	Perf. Ratio PR	83.80 %
Used Energy	18209.21 kWh/year			Solar Fraction SF	40.02 %

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PVsyst V7.3.2

VC2, Simulation date:

14/04/23 10:45

with v7.3.2

GIMECOL SOLAR (Colombia)

General parameters

Grid-Connected System

Sin escena 3D definida, sin sombras, localidad Antonio Nariño

PV Field Orientation

Orientation
Fixed plane
Tilt/Azimuth

15 / 45 °

Models used
Transposition
Diffuse
Circumsolar

Perez
Perez, Meteonorm
separate

Horizon

Free Horizon

Near Shadings

No Shadings

User's needs
Monthly values

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1.51	0.80	1.55	1.50	1.50	1.50	1.50	1.58	1.54	1.69	1.65	1.90	18.2
												MWh/mth

PV Array Characteristics

PV module		Inverter		Enphase	
Manufacturer		Manufacturer		Model	
Model	(Original PVsyst database)	JAM72-S03-400-PR	JA solar	Model	IQ7PLUS-72-x-208
Unit Nom. Power	400 Wp	Unit Nom. Power			0.290 kWac
Number of PV modules	33 units	Number of inverters			33 units
Nominal (STC)	13.20 kWp	Total power			9.6 kWac
Modules	33 Strings x 1 In series	Operating voltage			16-48 V
At operating cond. (50°C)		Max. power (=>60°C)			0.300 kWac
Pmpp	12.01 kWp	Phom ratio (DC:AC)			1.38
U mpp	37 V				
I mpp	325 A				
Total PV power		Total inverter power			
Nominal (STC)	13 kWp	Total power			9.6 kWac
Total	33 modules	Max. power			9.9 kWac
Module area	66.2 m²	Number of inverters			33 units
Cell-area	59.3 m²	Phom ratio			1.38

Array losses

Thermal Loss factor		DC wiring losses		Module Quality Loss	
Module temperature according to irradiance		Global array res.		Loss Fraction	
Uc (const)	20.0 W/m²K	Loss Fraction		1.9 mΩ	-0.8 %
Uv (wind)	0.0 W/m²K/m/s			1.5 % at STC	
Module mismatch losses		Strings Mismatch loss			
Loss Fraction	0.0 % at MPP	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	0.403	0.000



Project: GRUPO LÍNEA BARBARELLA Evento148176

Variant: Grupo Línea Barbarella sas

GIMECOL SOLAR (Colombia)

PVsyst V7.3.2
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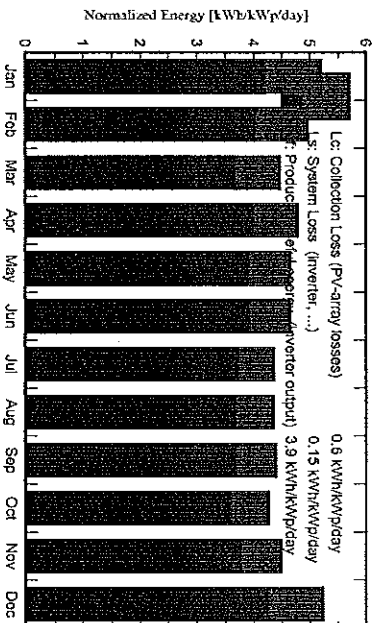
Main results

System Production

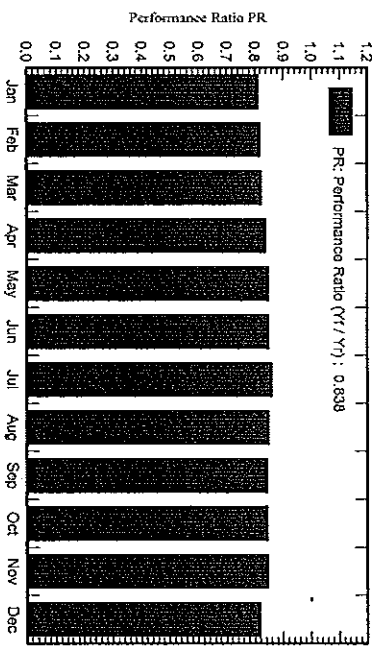
Produced Energy 18812.94 kWh/year
Used Energy 18209.21 kWh/year

Specific production 1425 kWh/kWp/year
Performance Ratio PR 83.80 %
Solar Fraction SF 40.02 %

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_User kWh	E_Solar kWh	E_Grid kWh	EFrGrid kWh
January	153.1	66.82	13.20	161.6	156.7	1802	1510	596.6	1139	914
February	134.1	54.79	13.51	139.3	135.2	1566	800	344.7	1163	455
March	140.4	68.68	13.75	139.1	134.4	1575	1550	620.1	895	930
April	149.7	65.85	13.78	143.8	139.2	1654	1500	600.4	992	899
May	156.4	66.82	13.95	144.2	138.9	1678	1495	600.6	1015	894
June	152.9	64.21	13.49	139.7	134.0	1627	1495	620.2	947	874
July	148.6	67.87	13.58	135.5	129.8	1599	1500	607.4	932	892
August	146.3	77.54	13.51	135.2	129.9	1575	1580	639.2	878	941
September	135.6	67.51	13.18	132.1	128.0	1530	1540	619.1	854	921
October	132.6	78.29	13.44	132.8	128.4	1539	1690	667.7	815	1022
November	132.6	68.57	13.40	135.1	130.6	1569	1650	630.9	881	1019
December	153.2	65.76	13.37	162.5	157.8	1823	1900	741.4	1015	1159
Year	1735.4	812.69	13.51	1700.8	1642.9	19536	18209	7288.2	11525	10921

Legends

GlobHor	Global horizontal irradiation	EArray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	E_User	Energy supplied to the user
T_Amb	Ambient Temperature	E_Solar	Energy from the sun
GlobInc	Global incident in coll. plane	E_Grid	Energy injected into grid
GlobEff	Effective Global, corr. for IAM and shadings	EFrGrid	Energy from the grid



Project: GRUPO LÍNEA BARBARELLA Evento148176

Variant: Grupo Línea Barbarella sas

PVsyst V7.3.2

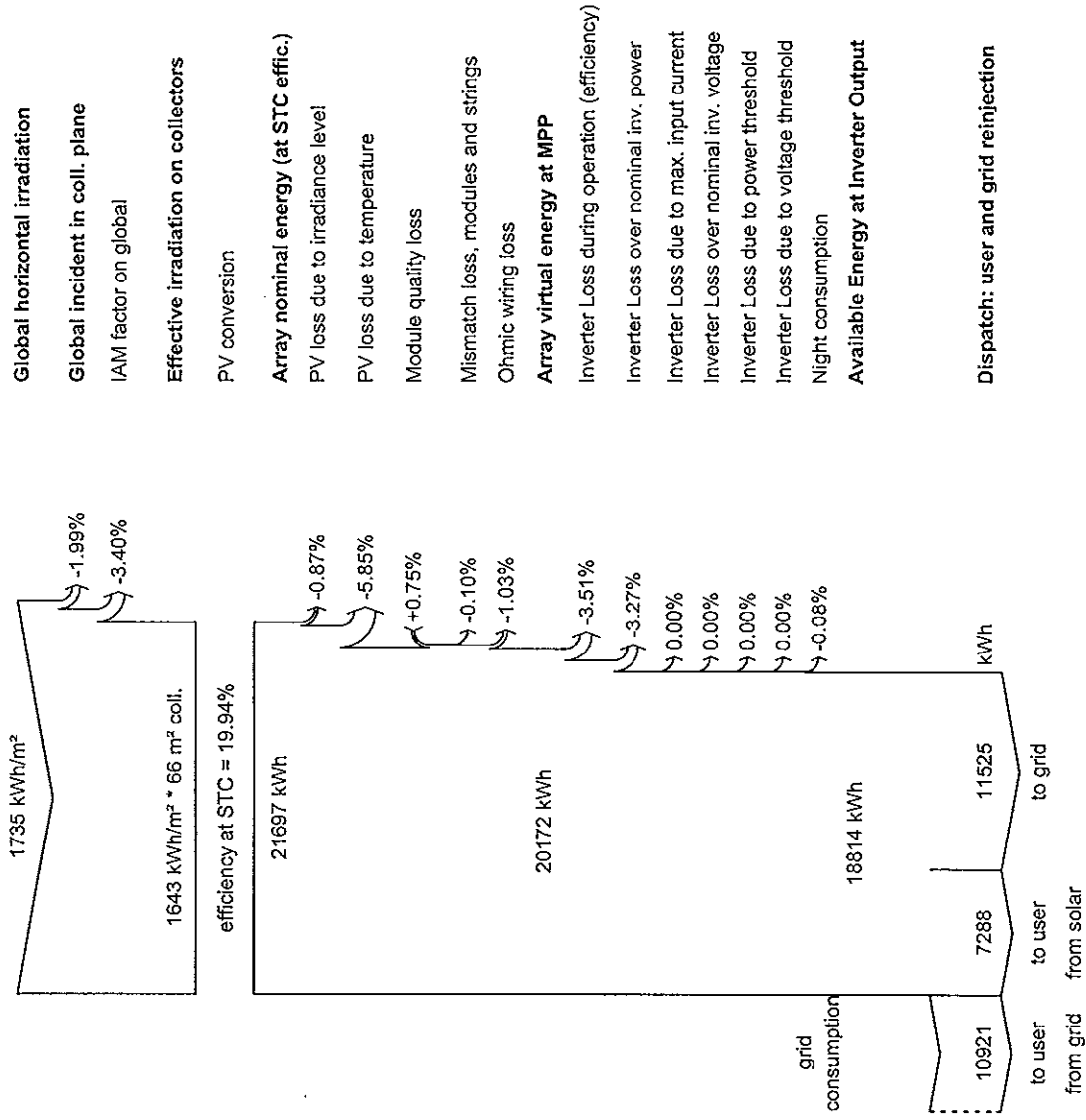
VC2, Simulation date:

14/04/23 10:45

with v7.3.2

GIMECOL SOLAR (Colombia)

Loss diagram





Project: GRUPO LÍNEA BARBARELLA Evento148176

Variant: Grupo Línea Barbarella sas

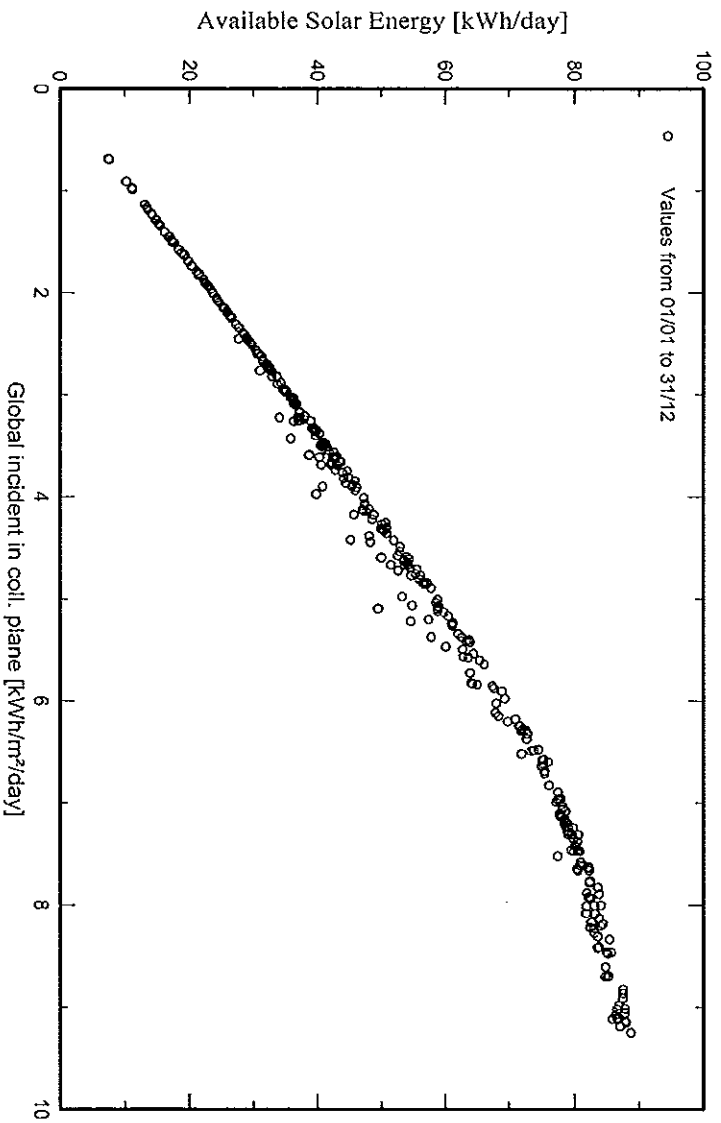
GIMECOL SOLAR (Colombia)

PVsyst V7.3.2

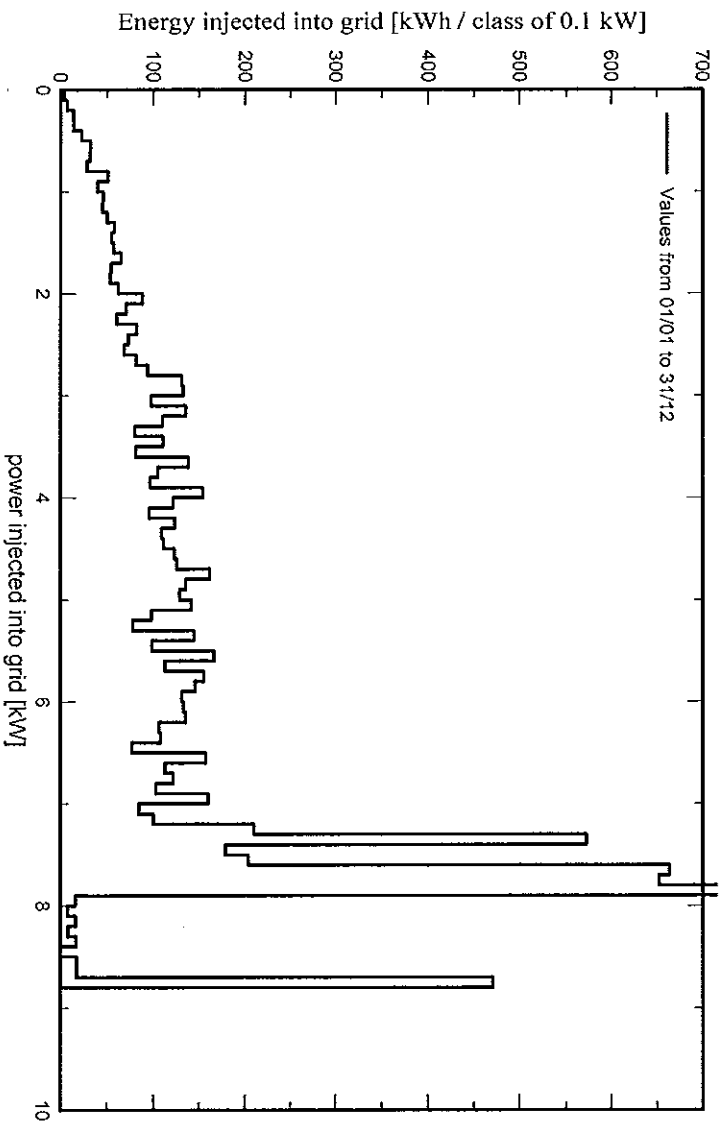
VC2, Simulation date:
14/04/23 10:45
with V7.3.2

Predef. graphs

Diagrama entrada/salida diaria



Distribución de potencia de salida del sistema





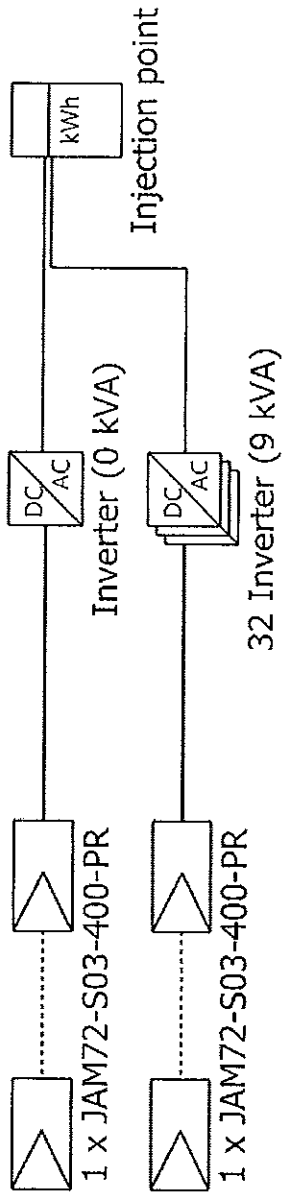
PVsyst V7.3.2

VC2, Simulation date:

14/04/23 10:45

with v7.3.2

Single-line diagram



3	PV module	JAM72-S03-400-PR	GRUPO LÍNEA BARBARELLA Eve nto148176	GIMECOL SOLAR (Colombia)	14/04/23
	Inverter	IQ7PLUS-72-x-208			
2	String	1 x JAM72-S03-400-PR			
1	VC2 : Grupo Línea Barbarella sas				

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PVsyst - Simulation report

Grid-Connected System

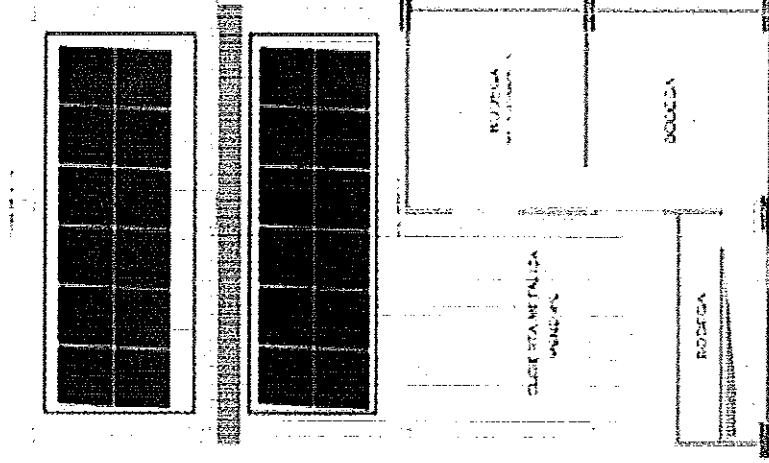
Proyecto: INVERSIONES OTELO Evento148176

Variant: Inversiones Oteló

Sin escena 3D definida, sin sombras, Localidad Antonio Nariñ

System power: 6.40 kWp

Santiago Pérez - Colombia



JULIO DARIO FUENTES
GIMECOL SOLAR (Colombia)



Gimecol Solar



Project: CREACIONES MONACHITOS SAS Evento148176

Variant: Inversiones Oteño

GIMECOL SOLAR (Colombia)

PVsyst V7.3.2

VC4, Simulation date:
14/04/23 12:13
with v7.3.2

Project summary			
Geographical Site		Situation	
Santiago Pérez		Latitude	4.59 °N
Colombia		Longitude	-74.11 °W
		Altitude	2585 m
		Time zone	UTC-5
Project settings			
Albedo			0.20
Meteo data			
Santiago Pérez			
Meteonorm 8.1 (2016-2021), Sat=100% - Sintético			

System summary			
Grid-Connected System		Sin escena 3D definida, sin sombras, Localidad Antonio Nariñ	
PV Field Orientation		Near Shadings	
Fixed plane		No Shadings	
Tilt/Azimuth		15 / 45 °	
System information			
PV Array		Inverters	
Nb. of modules		16 units	
Pnom total		6.40 kWp	
		Nb. of units	
		Pnom total	
		Pnom ratio	
		16 units	
		4640 W	
		1.379	

Results summary			
Produced Energy	9121.16 kWh/year	Specific production	1425 kWh/kWp/year
Used Energy	16750.00 kWh/year	Perf. Ratio PR	83.80 %
		Solar Fraction SF	33.89 %

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PVsyst V7.3.2

VC4. Simulation date:

14/04/23 12:13

with v7.3.2

GIMECOL SOLAR (Colombia)

General parameters

Grid-Connected System

Sin escena 3D definida, sin sombras, Localidad Antonio Nariño

PV Field Orientation

Orientation

Sheds configuration

Models used

Fixed plane

No 3D scene defined

Transposition

Tilt/Azimuth

15 / 45 °

Diffuse

Perez, Meteorom

Circumsolar

separate

Horizon

Near Shadings

User's needs

Free Horizon

No Shadings

Monthly values

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1.50	0.90	1.20	1.40	0.80	1.30	1.35	1.40	1.30	1.80	1.70	2.10	16.8
												MWh/mth

PV Array Characteristics

PV module

Manufacturer

JA solar

Model

JAM72-S03-400-PR

(Original PVsyst database)

Unit Nom. Power

400 Wp

Number of PV modules

16 units

Nominal (STC)

6.40 kWp

Modules

16 Strings x 1 In series

At operating cond. (50°C)

Pmpp

5.82 kWp

U mpp

37 V

I mpp

158 A

Total PV power

Nominal (STC)

6 kWp

Total

16 modules

Module area

32.1 m²

Cell area

28.8 m²

Inverter

Manufacturer

Model

(Original PVsyst database)

Unit Nom. Power

0.290 kWac

Number of inverters

16 units

Total power

4.6 kWac

Operating voltage

16-48 V

Max. power ($\Rightarrow 60^{\circ}\text{C}$)

0.300 kWac

Pnom ratio (DC:AC)

1.38

Total inverter power

Total power

4.6 kWac

Max. power

4.8 kWac

Number of inverters

16 units

Pnom ratio

1.38

Enphase

IQ7PLUS-72-x-208

Array losses

Thermal Loss factor

Module temperature according to irradiance

Uc (const)

Uv (wind)

Global array res.

Loss Fraction

0.0 W/m²K/m/s

1.5 % at STC

Module mismatch losses

Loss Fraction

Strings Mismatch loss

0.0 % at MPP

0.1 %

Module Quality Loss

Loss Fraction

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	0.403	0.000



Project: CREACIONES MONACHITOS SAS Evento148176

Variant: Inversiones Otelo

GIIMECOL SOLAR (Colombia)

PVsyst V7.3.2
VCA, Simulation date:
14/04/23 12:13
with V7.3.2

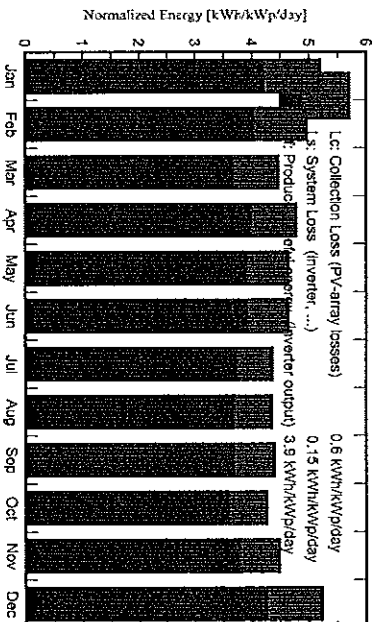
Main results

System Production

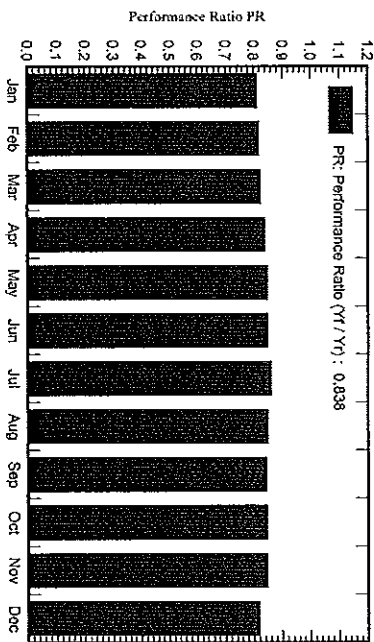
Produced Energy 9121.16 kWh/year
Used Energy 16750.00 kWh/year

Specific production 1425 kWh/kWp/year
Performance Ratio PR 83.80 %
Solar Fraction Sf 33.89 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

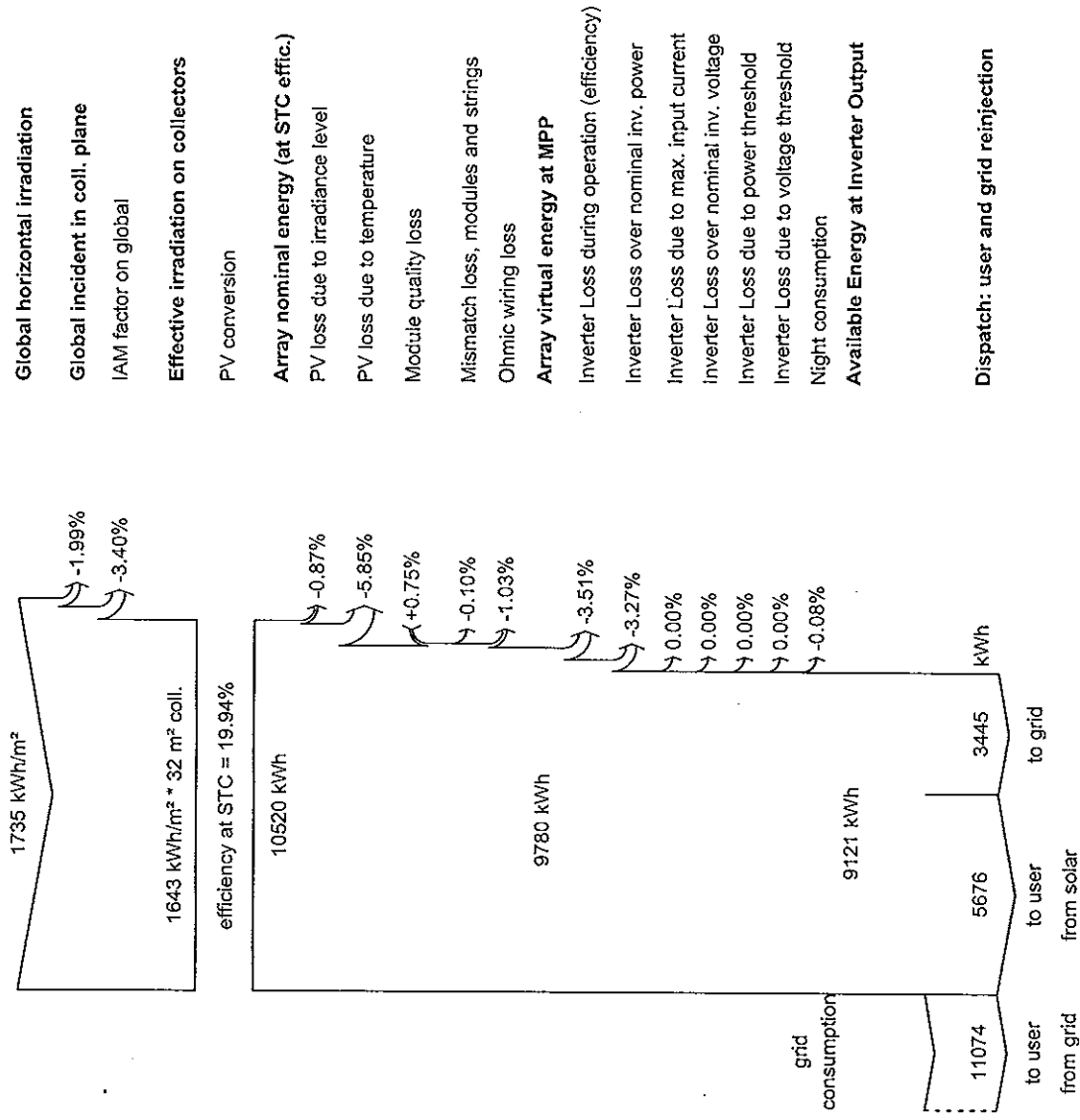
	GloboHor	DiffHor	T_Amb	Globlinc	Globleff	EArray	E_User	E_Solar	E_Grid	EFrGrid
	kWh/m²	kWh/m²	°C	kWh/m²	kWh/m²	kWh	kWh	kWh	kWh	kWh
January	153.1	66.82	13.20	161.6	156.7	873.5	1500	513.9	327.3	986
February	134.1	54.79	13.51	139.3	135.2	759.4	900	338.3	392.5	562
March	140.4	68.68	13.75	139.1	134.4	763.5	1200	421.5	313.2	778
April	149.7	65.85	13.78	143.8	139.2	802.0	1400	470.7	301.2	929
May	156.4	66.82	13.95	144.2	138.9	813.5	800	315.0	468.5	485
June	152.9	64.20	13.49	139.7	134.0	789.0	1300	466.8	293.0	833
July	148.6	67.87	13.58	135.5	129.8	775.1	1350	466.9	279.5	883
August	146.3	77.54	13.51	135.2	129.9	763.5	1400	482.2	253.1	918
September	135.6	67.51	13.18	132.1	128.0	741.8	1300	451.2	263.0	849
October	132.6	78.29	13.44	132.8	128.4	746.3	1800	558.8	160.3	1241
November	132.6	68.57	13.40	135.1	130.6	760.9	1700	532.4	200.5	1168
December	153.2	65.76	13.37	162.5	157.8	883.7	2100	658.7	192.7	1441
Year	1735.4	812.69	13.51	1700.8	1642.9	9472.1	16750	5676.3	3444.9	11074

Legends

GloboHor	Global horizontal irradiation	EArray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	E_User	Energy supplied to the user
T_Amb	Ambient Temperature	E_Solar	Energy from the sun
Globlinc	Global incident in coil, plane	E_Grid	Energy injected into grid
Globleff	Effective Global, corr. for IAM and shadings	EFrGrid	Energy from the grid



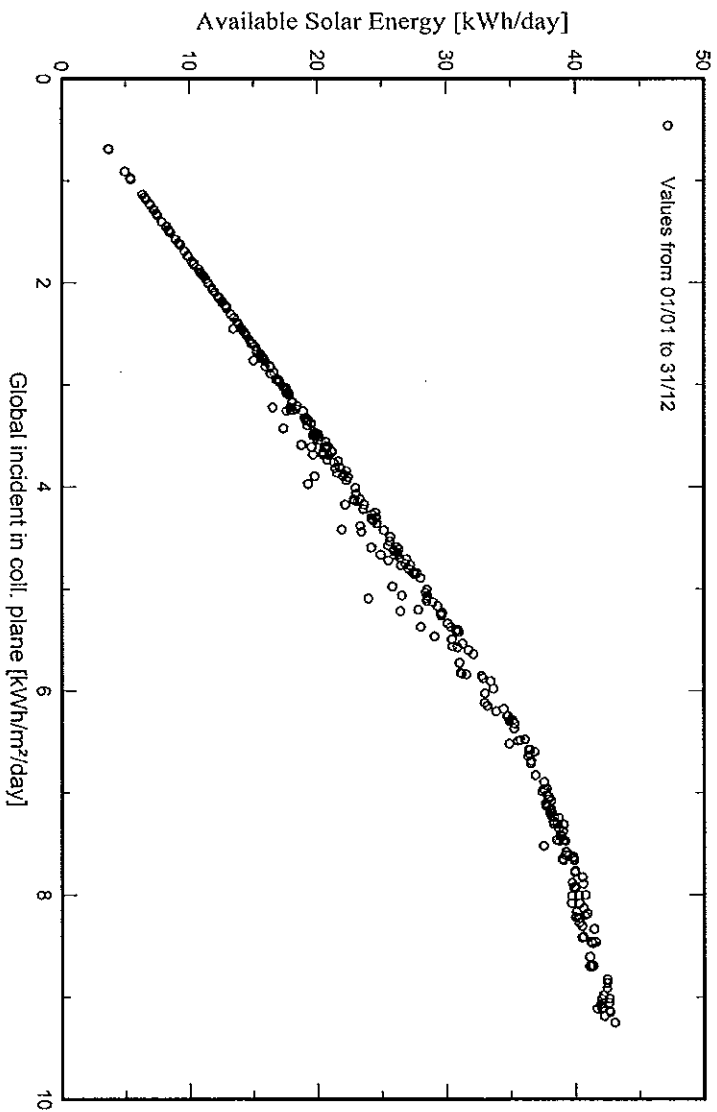
Loss diagram



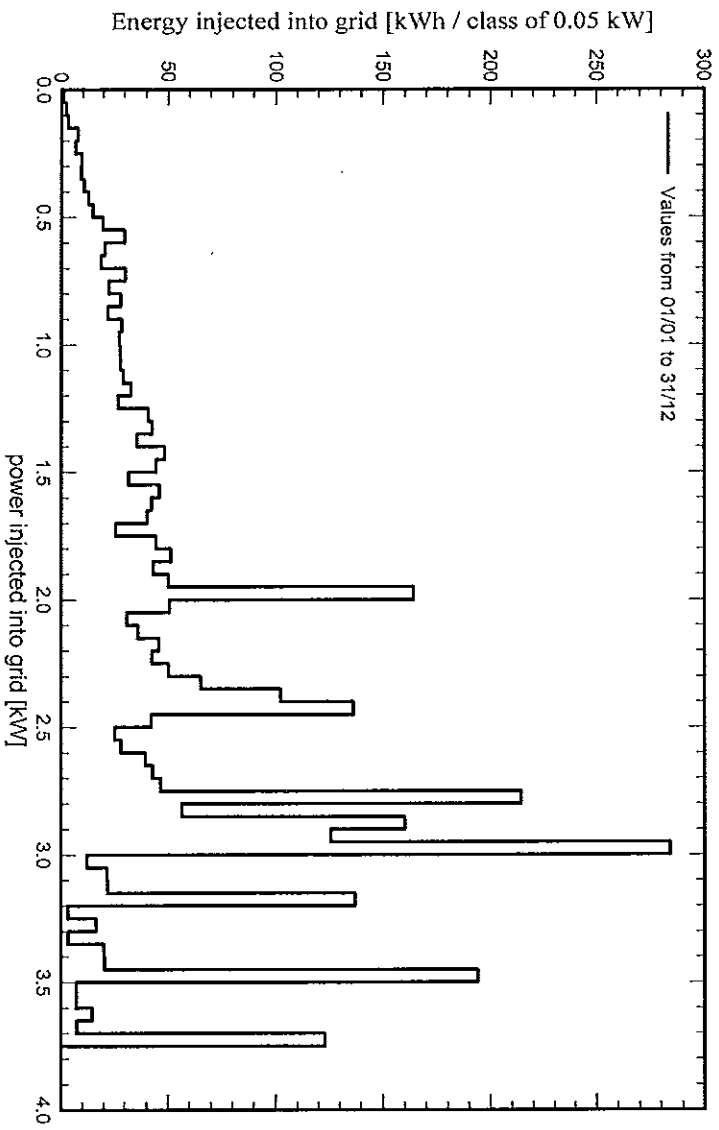


Predef. graphs

Diagrama entrada/salida diaria



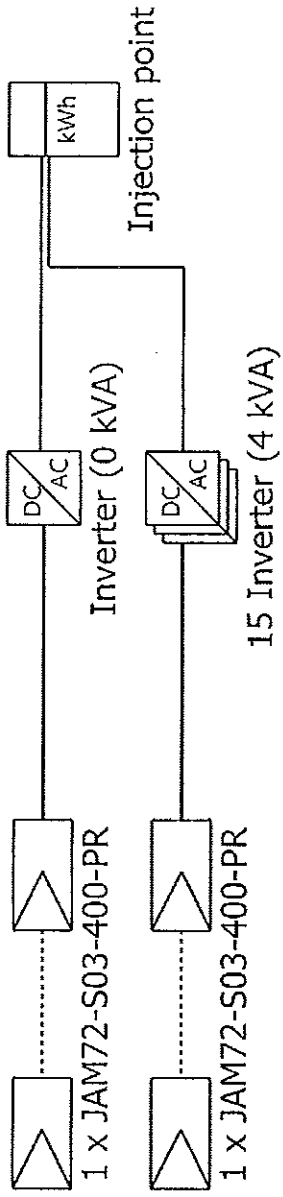
Distribución de potencia de salida del sistema





PVsyst V7.3.2
VC4, Simulation date:
14/04/23 12:13
with v7.3.2

Single-line diagram



PV module	JAM72-S03-400-PR
Inverter	IQ7PLUS-72-x-208
String	1 x JAM72-S03-400-PR
CREACIONES MONACHITOS SAS Evento148176	GIMECOL SOLAR (Colombia)
VC4 : Inversiones Otelo	14/04/23

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PVsyst - Simulation report

Grid-Connected System

Project: Gabriel Fonseca y Cia Evento148176

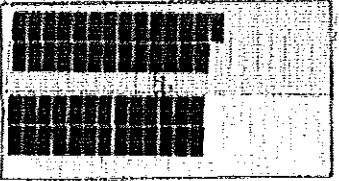
Variante: Simulación Colombia Compra Eficiente

localidad Antonio Nariño Colombia Compra Eficiente

System power: 29.20 kWp

Santiago Pérez - Colombia

1. GABRIEL FONSECA Y CIA SAS / CALZADO TAURO

Región en donde será instalado el Sistema Fotovoltaico	Bogotá D.C. (Región andina)
Área que dispone la entidad/sede para instalar el Sistema Fotovoltaico:	138 metros cuadrados
Tipo de instalación a realizar (si es en techo o piso)	Techo
Coordenadas geográficas en donde se hará la instalación (latitud y longitud)	4°35'14"N 74°06'25"W
Fotografías, mapas o diagramas que la entidad considere necesarios para la elaboración del estudio por parte de los proveedores.	



Project: Gabriel Fonseca y Cia Evento148176

Variante: Nueva variante de simulación

GIMECOL SOLAR (Colombia)

PVsyst V7.3.2

VCO, Simulation date:
13/04/23 16:28
with V7.3.2

Project summary

Geographical Site		Situation		Project settings	
Santiago Pérez		Latitude	4.59 °N	Albedo	0.20
Colombia		Longitude	-74.11 °W		
		Altitude	2585 m		
		Time zone	UTC-5		
Meteo data					
Santiago Pérez					
Meteonorm 8.1 (2016-2021), Sat=100% - Sintético					

System summary

Grid-Connected System		localidad Antonio Nariño Colombia Compra Eficiente	
PV Field Orientation		Near Shadings	
Fixed plane		No Shadings	
Tilt/Azimuth	15 / 45 °		
System information			
PV Array		Inverters	
Nb. of modules	73 units	Nb. of units	73 units
Prom total	29.20 kWp	Prom total	21.17 kWac
		Prom ratio	1.379

Results summary

Produced Energy	41633 kWh/year	Specific production	1426 kWh/kWp/year	Perf. Ratio PR	83.83 %
Used Energy	40360 kWh/year			Solar Fraction SF	39.89 %

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Single-line diagram	7
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PVsyst V7.3.2

VCO. Simulation date:

13/04/23 16:28

with v7.3.2

GIMECOL SOLAR (Colombia)

General parameters

Grid-Connected System

localidad Antonio Nariño Colombia Compra Eficiente

PV Field Orientation

Orientation

Fixed plane

Tilt/Azimuth

15 / 45 °

Sheds configuration

No 3D scene defined

Models used

Transposition :

Diffuse Perez, Meteorom

Circumsolar separate

Horizon

Free Horizon

Near Shadings

No Shadings

User's needs

Monthly values

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
2.15	2.58	3.45	3.39	2.36	3.15	3.25	3.38	3.48	3.89	3.98	5.30	40.4
												MWh/mth

PV Array Characteristics

PV module		Inverter		Enphase	
Manufacturer		Manufacturer		Model	
Model		Model			
(Original PVsyst database)		(Original PVsyst database)		IQ7PLUS-72-x-208	
Unit Nom. Power	400 Wp	Unit Nom. Power		0.290 kWac	
Number of PV modules	73 units	Number of inverters		73 units	
Nominal (STC)	29.20 kWp	Total power		21.2 kWac	
Modules	73 Strings x 1 In series	Operating voltage		16-48 V	
At operating cond. (50°C)		Max. power (>=60°C)		0.300 kWac	
Pmpp	26.64 kWp	Phom ratio (DC:AC)		1.38	
U mpp	37 V				
I mpp	714 A				
Total PV power		Total inverter power			
Nominal (STC)	29 kWp	Total power		21.2 kWac	
Total	73 modules	Max. power		21.9 kWac	
Module area	147 m²	Number of inverters		73 units	
		Phom ratio		1.38	

Array losses

Thermal Loss factor		DC wiring losses		Module Quality Loss				
Module temperature according to irradiance		Global array res.		Loss Fraction				
Uc (const)	20.0 W/m²K	Loss Fraction		-0.8 %				
Uv (wind)	0.0 W/m²K/m/s			1.5 % at STC				
Module mismatch losses		Strings Mismatch loss						
Loss Fraction	0.0 % at MPP	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	0.403	0.000



Project: Gabriel Fonseca y Cia Evento148176

Variante: Nueva variante de simulación

GIMECOL SOLAR (Colombia)

PVsyst V7.3.2
VCO, Simulation date:
13/04/23 16:28
with V7.3.2

Main results

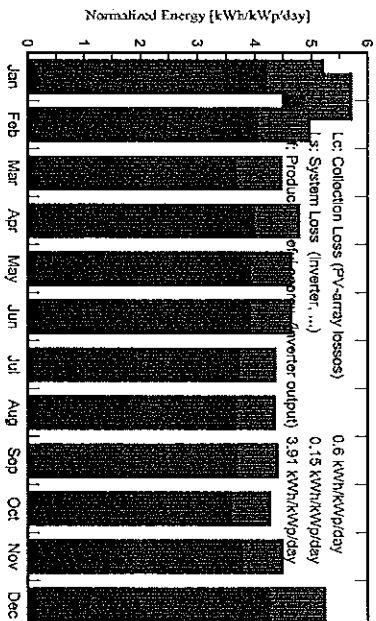
System Production
Produced Energy
Used Energy

41633 kWh/year
40360 kWh/year

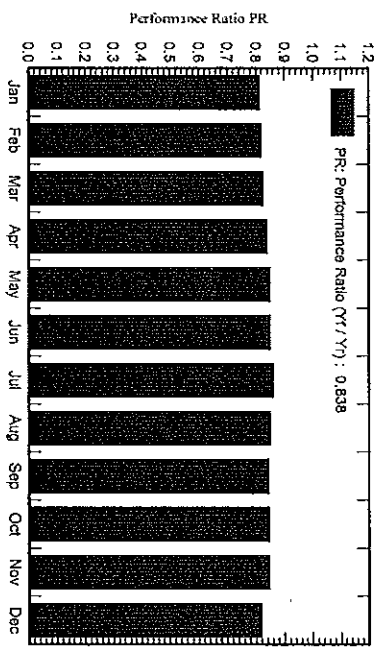
Specific production
Performance Ratio PR
Solar Fraction SF

1426 kWh/kWp/year
83.83 %
39.89 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

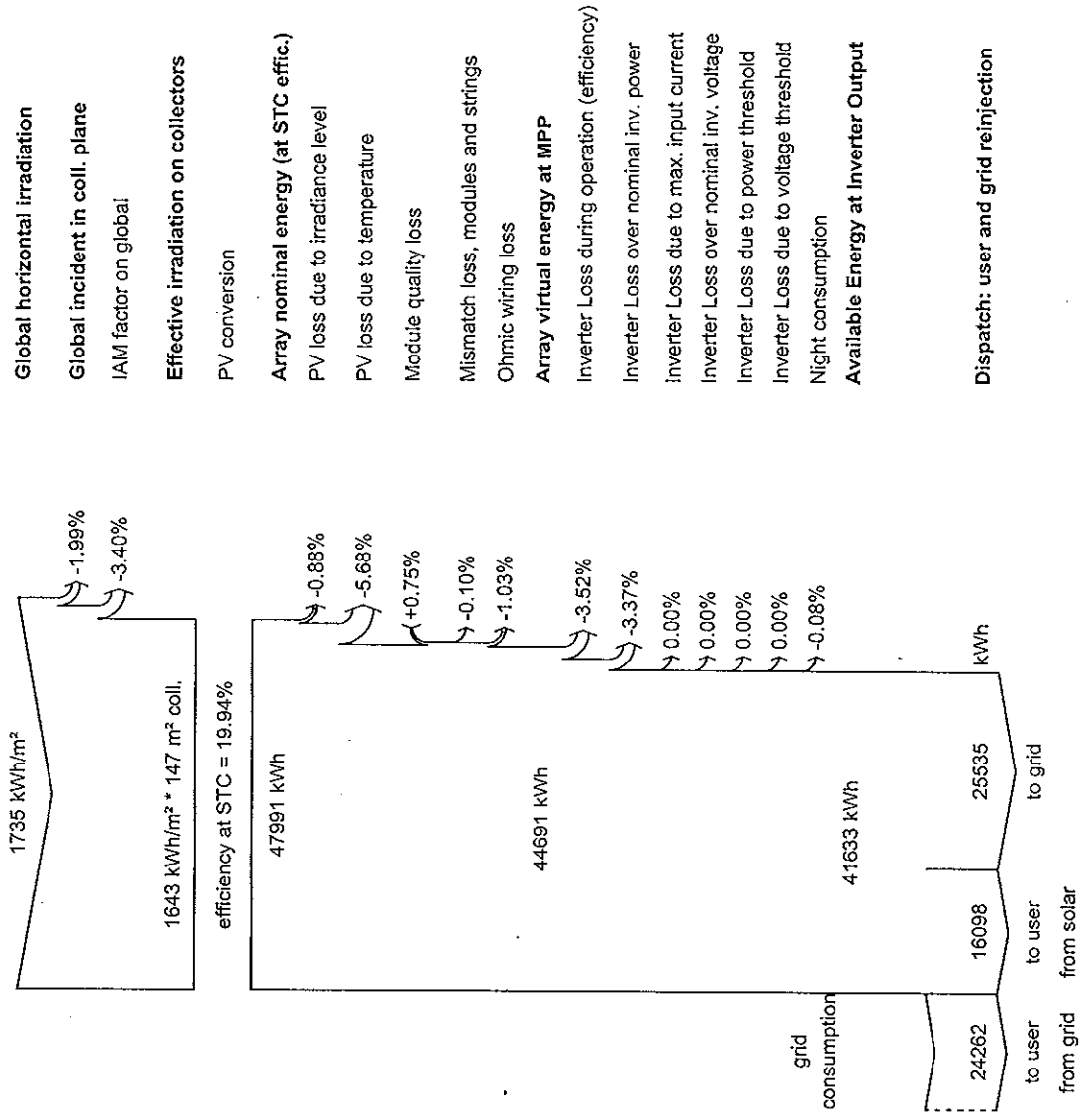
	GlobHor kWh/m²	DiffHor kWh/m²	T_Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	Earray kWh	E_User kWh	E_Solar kWh	E_Grid kWh	EFrGrid kWh
January	153.1	66.82	13.20	161.6	156.7	3987	2150	892	2948	1258
February	134.1	54.79	13.51	139.3	135.2	3466	2580	1063	2273	1517
March	140.4	68.68	13.75	139.1	134.4	3485	3450	1378	1975	2072
April	149.7	65.85	13.78	143.8	139.2	3661	3390	1350	2173	2040
May	156.4	66.82	13.95	144.2	138.9	3714	2360	998	2579	1362
June	152.9	64.20	13.49	139.7	134.0	3602	3150	1321	2147	1829
July	148.6	67.87	13.58	135.5	129.8	3539	3250	1322	2086	1928
August	146.3	77.54	13.51	135.2	129.9	3485	3380	1376	1980	2004
September	135.6	67.51	13.18	132.1	128.0	3386	3480	1394	1865	2086
October	132.6	78.29	13.44	132.8	128.4	3407	3890	1528	1754	2362
November	132.6	68.57	13.40	135.1	130.6	3473	3980	1498	1848	2482
December	153.2	65.76	13.37	162.5	157.8	4034	5300	1979	1907	3321
Year	1735.4	812.69	13.51	1700.8	1642.9	43239	40360	16098	25535	24262

Legends

GlobHor	Global horizontal irradiation	Earray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	E_User	Energy supplied to the user
T_Amb	Ambient Temperature	E_Solar	Energy from the sun
GlobInc	Global incident in coll. plane	E_Grid	Energy injected into grid
GlobEff	Effective Global, corr. for IAM and shadings	EFrGrid	Energy from the grid



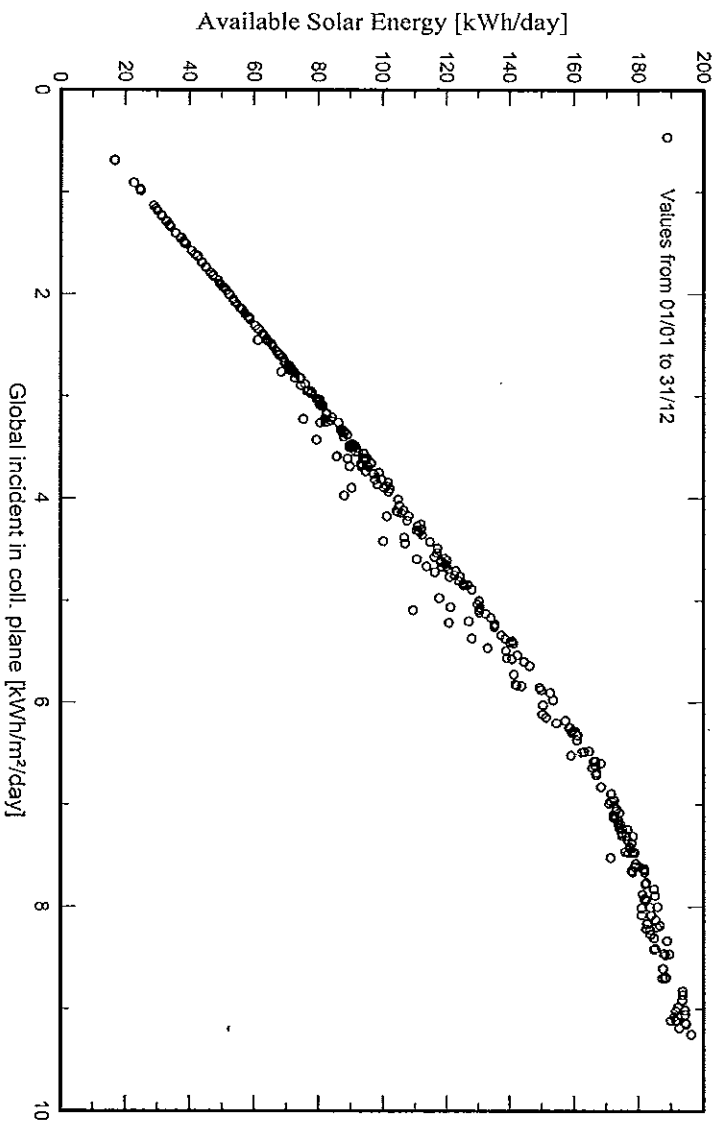
Loss diagram



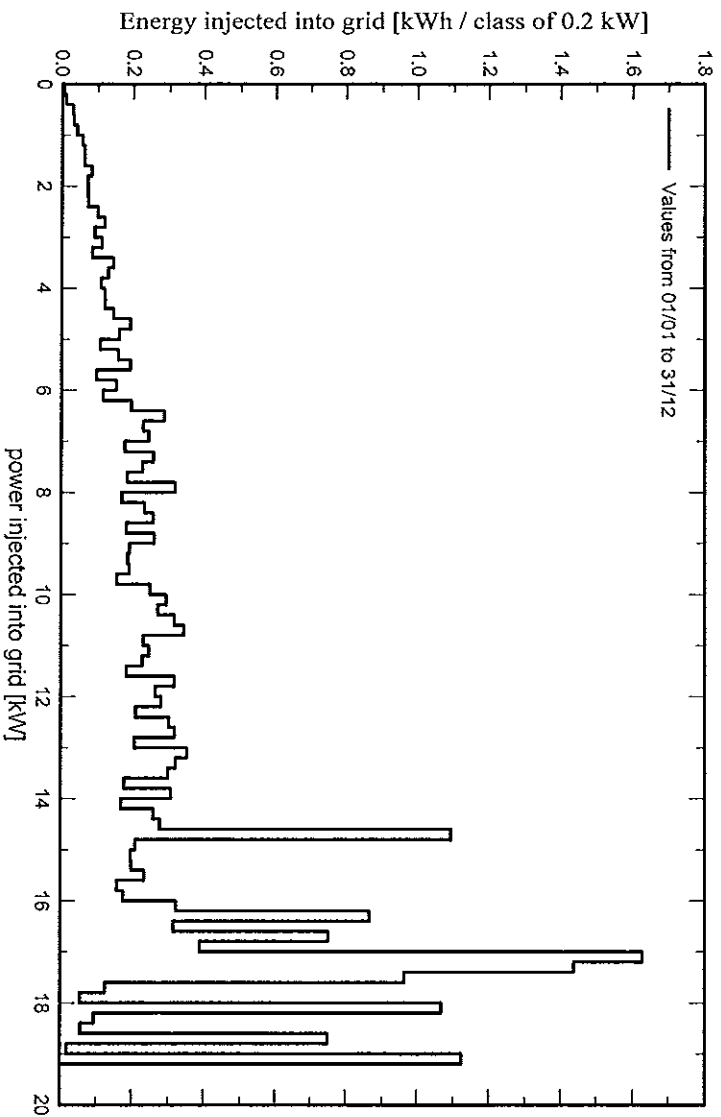


Predef. graphs

Diagrama entrada/salida diaria



Distribución de potencia de salida del sistema





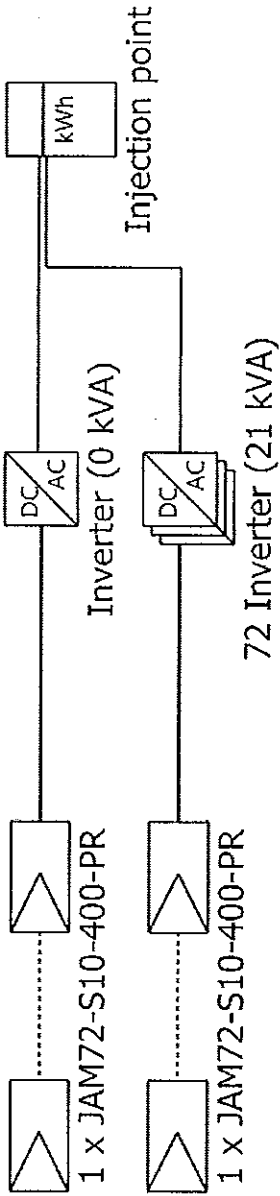
PVsyst V7.3.2

VC0, Simulation date:

13/04/23 16:28

with v7.3.2

Single-line diagram



PV module JAM72-S10-400-PR

Inverter IQ7PLUS-72-x-208

String 1 x JAM72-S10-400-PR

Gabriel Fonseca y Cia Evento148
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GIMECOL SOLAR (
Colombia)

VC0 : Nueva variante de simulación

13/04/23



Cost of the system

Installation costs

Item	Quantity units	Cost		Total
		EUR	Total	EUR
			Depreciable asset	0.00

Operating costs

Item			Total
			EUR/year
Total (OPEX)			0.00

System summary

Total installation cost	0.00 EUR
Operating costs	0.00 EUR/year
Unused energy	16.1 MWh/year
Energy sold to the grid	25.5 MWh/year
Cost of produced energy (LCOE)	0.000 EUR/kWh



PVsyst V7.3.2

VC0, Simulation date:
13/04/23 16:28
with v7.3.2

GIMECOL SOLAR (Colombia)

CO₂ Emission Balance

Total: 107.8 tCO₂

Generated emissions

Total: 58.14 tCO₂

Source: Detailed calculation from table below

Replaced Emissions

Total: 191.2 tCO₂
System production: 41.67 MWh/yr

Grid Lifecycle Emissions: 153 gCO₂/kWh

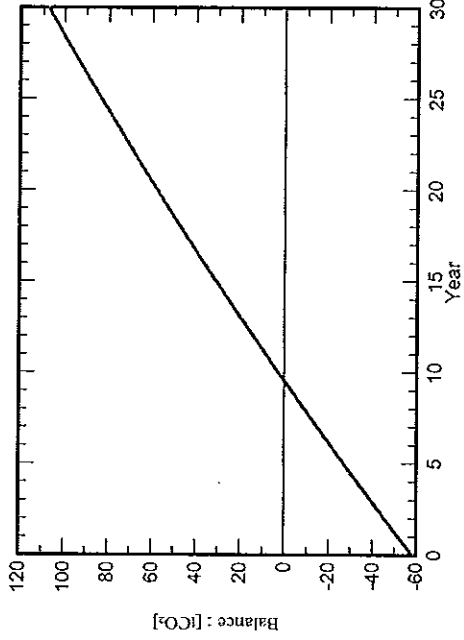
Source: IEA List

Country: Colombia

Lifetime: 30 years

Annual degradation: 1.0 %

Saved CO₂ Emission vs. Time



System Lifecycle Emissions Details

Item	LCE	Quantity	Subtotal
			[kgCO ₂]
Modules	1713 kgCO ₂ /kWp	29.2 kWp	50011
Supports	1.02 kgCO ₂ /kg	730 kg	745
Inverters	101 kgCO ₂ /	73.0	7380

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