

PVsyst - Simulation report

Grid-Connected System

Project: 70MW jalizi

Variant: New simulation variant

No 3D scene defined, no shadings

System power: 70.00 MWp

Jalīzī - Iran



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PVsyst V7.3.1

VC0, Simulation date:
09/06/26 11:41
with v7.3.1

Project summary

Geographical Site

Jalizi

Iran

Situation

Latitude 32.49 °N

Longitude 47.60 °E

Altitude 176 m

Time zone UTC+3.5

Project settings

Albedo 0.20

Meteo data

Jalizi

Meteonorm 8.1 (1985-2002), Sat=100% - Synthetic

System summary

Grid-Connected System

No 3D scene defined, no shadings

PV Field Orientation

Fixed plane

Tilt/Azimuth 32 / 0 °

Near Shadings

No Shadings

User's needs

Unlimited load (grid)

System information

PV Array

Nb. of modules

116670 units

Pnom total

70.00 MWp

Inverters

Nb. of units

24 units

Pnom total

52.80 MWac

Pnom ratio

1.326

Results summary

Produced Energy 123032094 kWh/year Specific production 1758 kWh/kWp/year Perf. Ratio PR 84.59 %

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General parameters**Grid-Connected System****No 3D scene defined, no shadings****PV Field Orientation****Orientation**

Fixed plane

Tilt/Azimuth 32 / 0 °

Sheds configuration

No 3D scene defined

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

Jinkosolar

Model

JKM-600N-78HL4-BDV

(Original PVsyst database)

Unit Nom. Power

600 Wp

Number of PV modules

116670 units

Nominal (STC)

70.00 MWp

Modules

7778 Strings x 15 In series

At operating cond. (50°C)

Pmpp

64.80 MWp

U mpp

631 V

I mpp

102745 A

Total PV power

Nominal (STC)

70002 kWp

Total

116670 modules

Module area

326129 m²**Inverter**

Manufacturer

SMA

Model

Sunny Central 2200

(Original PVsyst database)

Unit Nom. Power

2200 kWac

Number of inverters

24 units

Total power

52800 kWac

Operating voltage

570-950 V

Pnom ratio (DC:AC)

1.33

Total inverter power

Total power

52800 kWac

Number of inverters

24 units

Pnom ratio

1.33

Array losses**Thermal Loss factor**

Module temperature according to irradiance

Uc (const) 20.0 W/m²KUv (wind) 0.0 W/m²K/m/s**DC wiring losses**

Global array res.

0.10 mΩ

Loss Fraction

1.5 % at STC

Module Quality Loss

Loss Fraction

-0.8 %

Module mismatch losses

Loss Fraction 2.0 % at MPP

Strings Mismatch loss

Loss Fraction

0.1 %

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

123032094 kWh/year

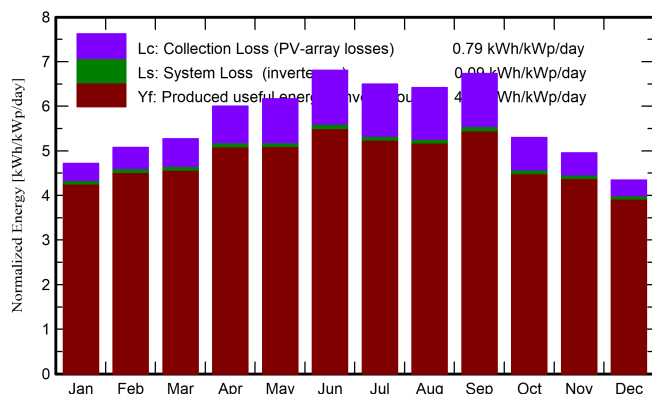
Specific production

1758 kWh/kWp/year

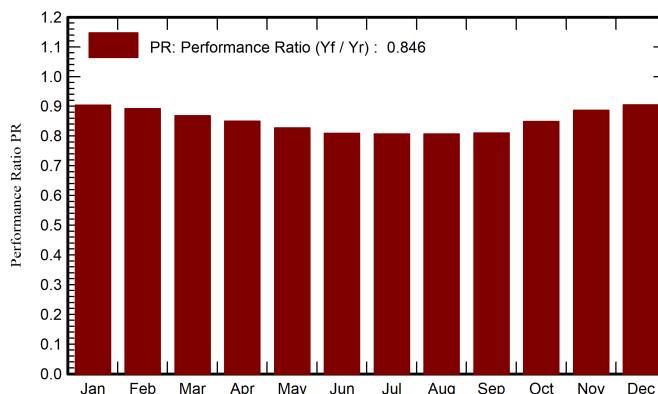
Performance Ratio PR

84.59 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

	GlobHor	DiffHor	T_Amb	GlobInc	GlobEff	EArray	E_Grid	PR
	kWh/m ²	kWh/m ²	°C	kWh/m ²	kWh/m ²	kWh	kWh	ratio
January	96.5	38.20	12.22	146.3	144.4	9426791	9256365	0.904
February	108.1	51.78	14.86	142.2	140.1	9038382	8874457	0.892
March	143.1	76.49	20.22	163.4	160.5	10115882	9935058	0.868
April	173.3	88.33	25.68	180.0	176.6	10897655	10703582	0.849
May	202.1	98.39	33.21	191.2	186.9	11271408	11076003	0.828
June	224.6	93.18	36.94	204.2	199.6	11775011	11570747	0.809
July	217.1	96.96	39.14	201.5	197.3	11583982	11386487	0.807
August	198.5	90.48	38.52	199.1	195.2	11446718	11250115	0.807
September	177.2	60.56	33.62	202.1	198.6	11665723	11459872	0.810
October	131.2	61.77	27.78	164.4	161.9	9937992	9764159	0.849
November	101.5	43.46	18.79	148.6	146.5	9388389	9222338	0.887
December	86.8	37.88	13.56	134.8	133.0	8688143	8532912	0.904
Year	1860.0	837.48	26.28	2077.7	2040.5	125236075	123032094	0.846

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

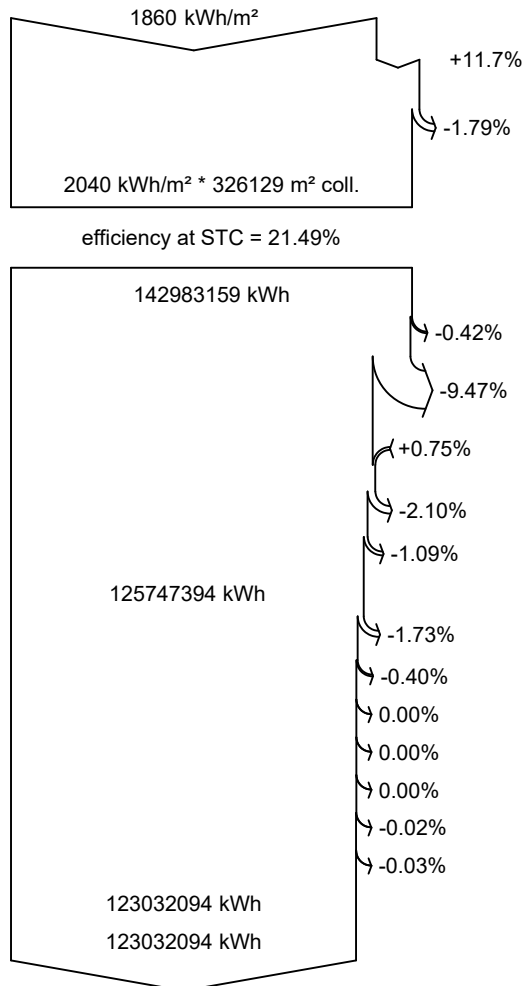
PR Performance Ratio



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Loss diagram



Global horizontal irradiation

Global incident in coll. plane

IAM factor on global

Effective irradiation on collectors

PV conversion

Array nominal energy (at STC effic.)

PV loss due to irradiance level

PV loss due to temperature

Module quality loss

Mismatch loss, modules and strings

Ohmic wiring loss

Array virtual energy at MPP

Inverter Loss during operation (efficiency)

Inverter Loss over nominal inv. power

Inverter Loss due to max. input current

Inverter Loss over nominal inv. voltage

Inverter Loss due to power threshold

Inverter Loss due to voltage threshold

Night consumption

Available Energy at Inverter Output

Energy injected into grid

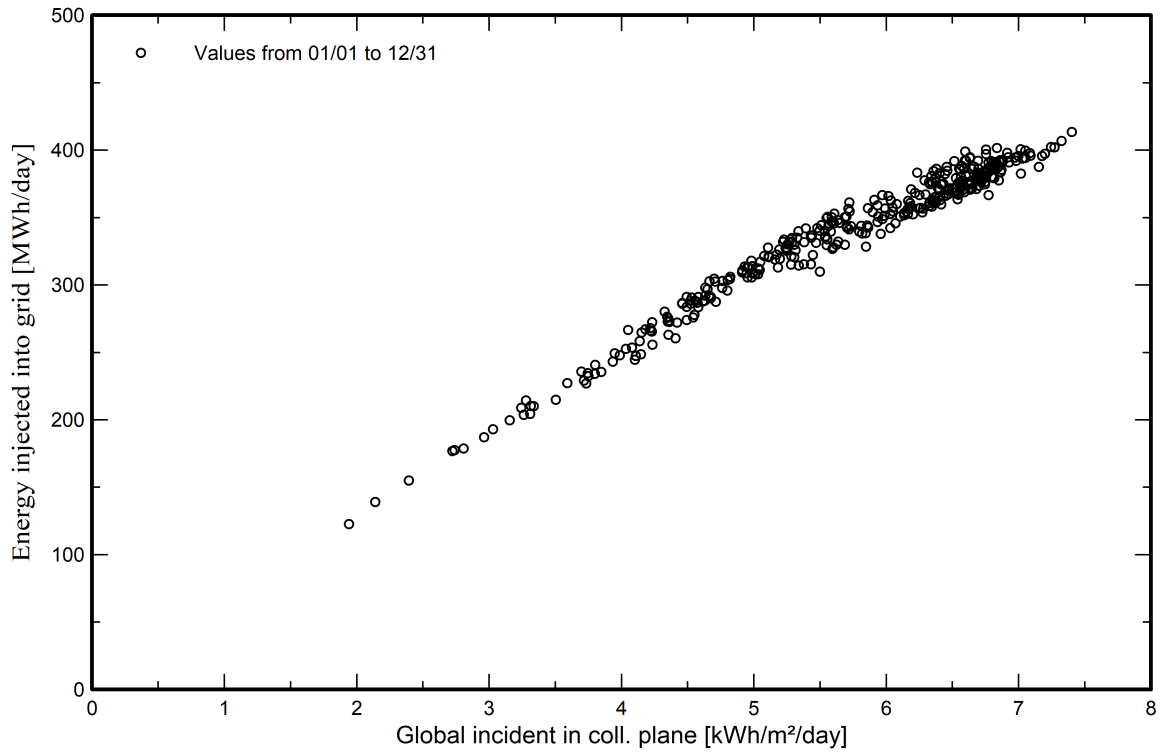


PVsyst V7.3.1

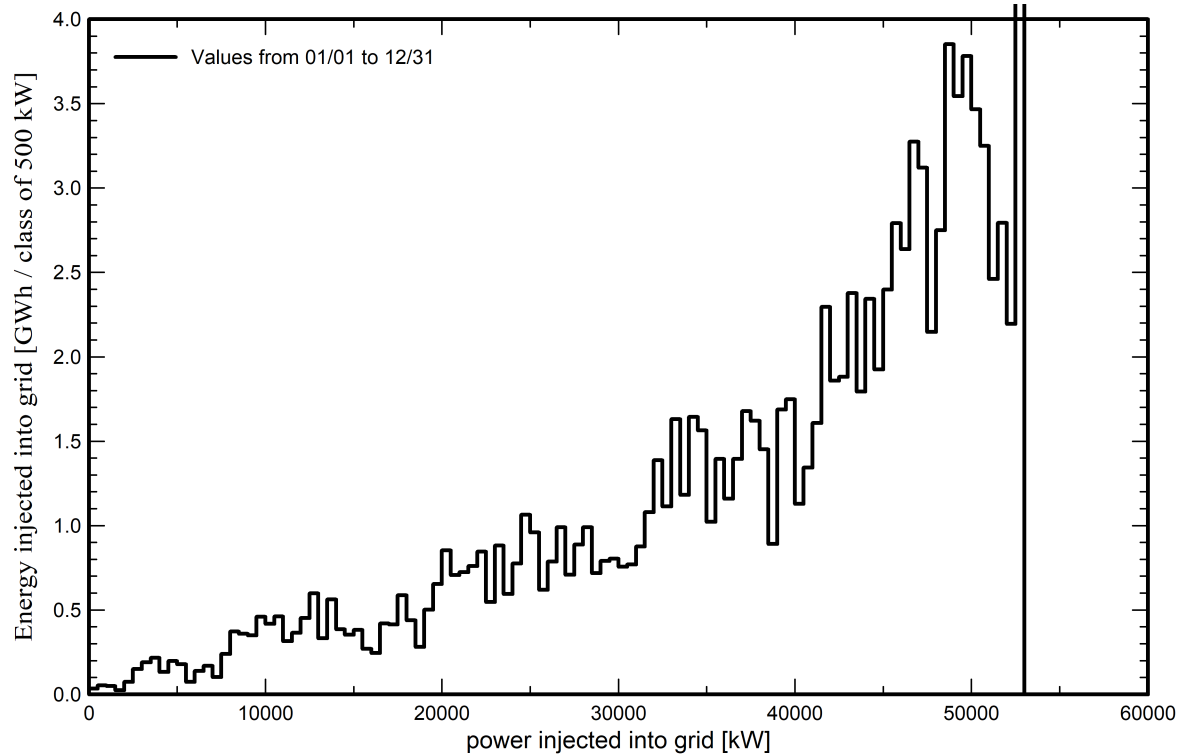
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Predef. graphs

Daily Input/Output diagram



System Output Power Distribution

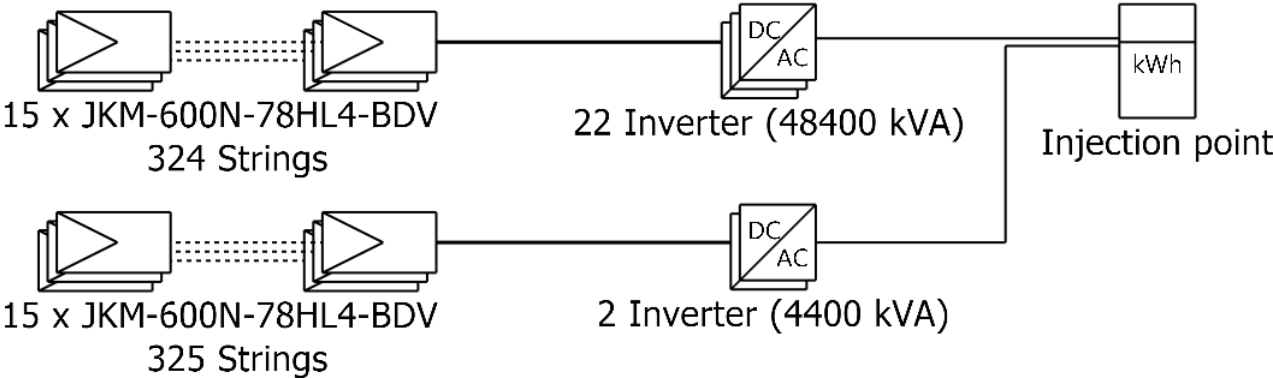




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Single-line diagram



PV module	JKM-600N-78HL4-BDV
Inverter	Sunny Central 2200
String	15 x JKM-600N-78HL4-BDV

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