

C Pvsyst analyse 90°



Version 7.3.3

PVsyst - Simulation report

Grid-Connected System

Project: Bro

Variant: New simulation variant

No 3D scene defined, no shadings

System power: 444 kWp

Jøa - Norway

Author

Sveinung Lenes Aga (Norway)


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19/04/23 21:37
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Project summary
Geographical Site

Jøa
Norway

Situation

Latitude 64.64 °N
Longitude 11.35 °E
Altitude 0 m
Time zone UTC+1

Project settings

Albedo 0.20

Meteo data

Jøa
Meteonorm 8.1 (1991-2013) - Synthetic

System summary
Grid-Connected System

No 3D scene defined, no shadings

PV Field Orientation

Fixed plane
Tilt/Azimuth 90 / 21.2 °

Near Shadings

No Shadings

User's needs

Unlimited load (grid)

System information
PV Array

Nb. of modules 1110 units
Pnom total 444 kWp

Inverters

Nb. of units 12 units
Pnom total 360 kWac
Pnom ratio 1.233

Results summary

Produced Energy 343111 kWh/year Specific production 773 kWh/kWp/year Perf. Ratio PR 84.82 %

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General parameters
Grid-Connected System

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PV Field Orientation
Orientation

Fixed plane

Tilt/Azimuth 90 / 21.2 °

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

Generic

Model

Mono 400 Wp 72 cells

(Original PVsyst database)

Unit Nom. Power

400 Wp

Number of PV modules

1110 units

Nominal (STC)

444 kWp

Modules

74 Strings x 15 In series

At operating cond. (50°C)

Pmpp

403 kWp

U mpp

517 V

I mpp

778 A

Total PV power

Nominal (STC)

444 kWp

Total

1110 modules

Module area

2488 m²

Cell area

2206 m²

Inverter

Manufacturer

Generic

Model

30 kWac inverter

(Original PVsyst database)

Unit Nom. Power

30.0 kWac

Number of inverters

12 units

Total power

360 kWac

Operating voltage

450-700 V

Pnom ratio (DC:AC)

1.23

Total inverter power

Total power

360 kWac

Number of inverters

12 units

Pnom ratio

1.23

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.

11 mΩ

Loss Fraction

1.5 % at STC

Module Quality Loss

Loss Fraction

-0.4 %

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

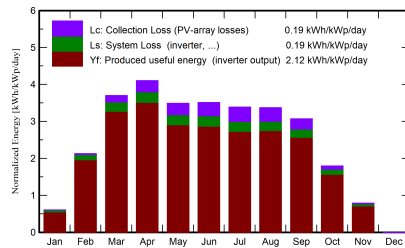
System Production

Produced Energy 343111 kWh/year

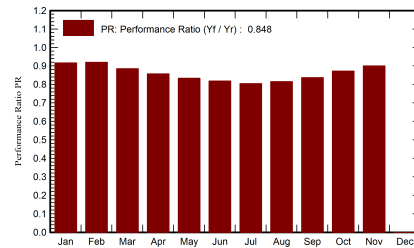
Specific production
Perf. Ratio PR

773 kWh/kWp/year
84.82 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

	GlobHor kWh/m ²	DiffHor kWh/m ²	T_Amb °C	GlobInc kWh/m ²	GlobEff kWh/m ²	EArray kWh	E_Grid kWh	PR ratio
January	4.3	3.20	-1.51	18.7	18.6	8303	7629	0.917
February	20.0	10.50	-1.25	59.6	59.0	26178	24371	0.920
March	63.6	25.53	0.74	114.8	112.4	48563	45116	0.886
April	109.3	46.57	4.99	123.1	119.1	50683	46865	0.858
May	150.5	76.10	9.38	108.2	103.5	43800	40070	0.834
June	160.8	88.52	12.21	105.3	100.4	42034	38281	0.819
July	155.0	76.65	15.39	105.1	100.2	41287	37575	0.805
August	115.5	56.51	14.88	104.6	100.7	41350	37881	0.816
September	65.6	29.72	10.62	92.1	90.0	37220	34245	0.837
October	27.1	17.20	5.84	55.7	54.9	23502	21594	0.873
November	6.3	4.58	1.89	23.7	23.6	10298	9484	0.900
December	0.0	0.00	0.00	0.0	0.0	0	0	0.000
Year	878.0	435.07	6.14	911.0	882.6	373219	343111	0.848

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



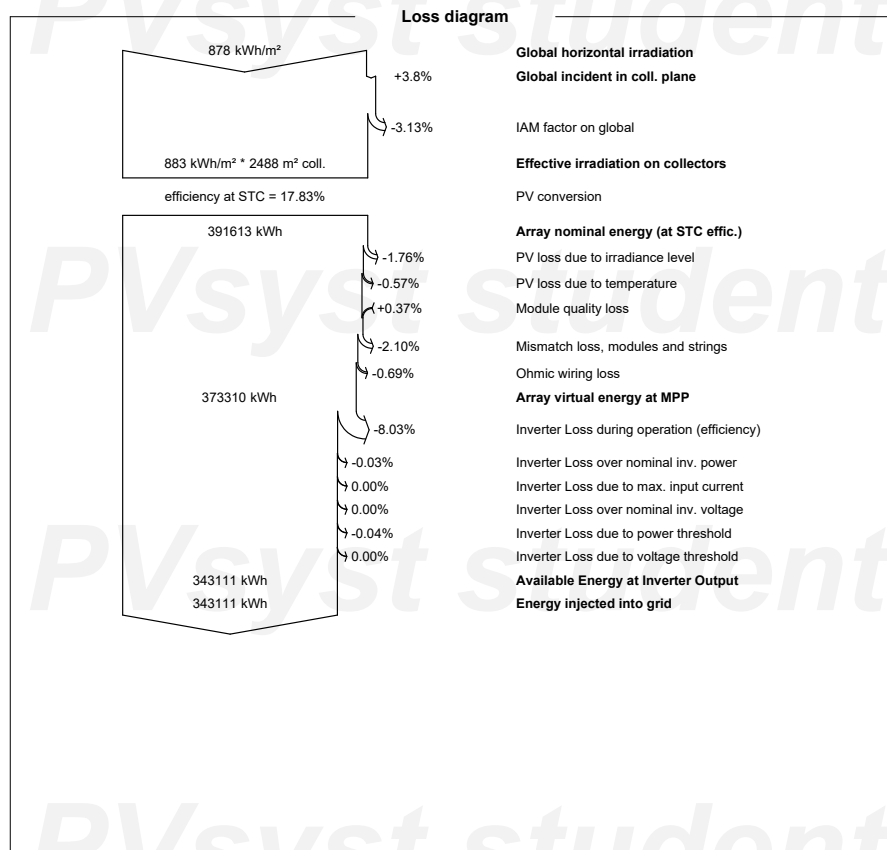
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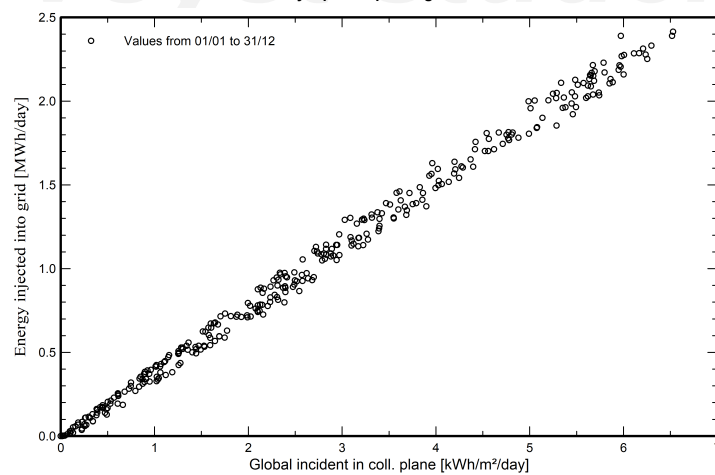
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Predef. graphs

Daily Input/Output diagram



System Output Power Distribution

