

## N Pvsyst analyse Nordside 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)


**PVsyst V7.3.3**

VC0, Simulation date:  
12/05/23 14:05  
with v7.3.3

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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 / -159 °

**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 126971 kWh/year Specific production 286 kWh/kWp/year Perf. Ratio PR 77.88 %

**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

**PV Field Orientation**
**Orientation**

Fixed plane

Tilt/Azimuth 90 / -159 °

**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

126971 kWh/year

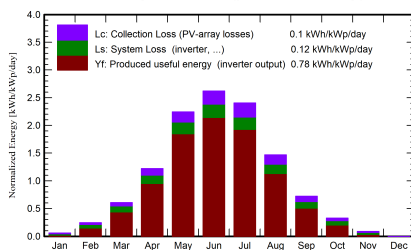
Specific production

286 kWh/kWp/year

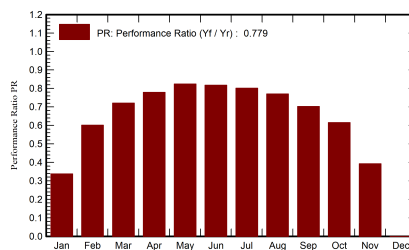
Perf. Ratio PR

77.88 %

## Normalized productions (per installed kWp)



## Performance Ratio PR



## Balances and main results

	GlobHor kWh/m <sup>2</sup>	DiffHor kWh/m <sup>2</sup>	T_Amb °C	GlobInc kWh/m <sup>2</sup>	GlobEff kWh/m <sup>2</sup>	EArray kWh	E_Grid kWh	PR ratio
January	4.3	3.20	-1.51	1.84	1.76	621	276	0.338
February	20.0	10.50	-1.25	6.90	6.62	2667	1842	0.602
March	63.6	25.53	0.74	18.89	17.86	7519	6042	0.721
April	109.3	46.57	4.99	36.61	34.44	14710	12667	0.779
May	150.5	76.10	9.38	69.63	66.22	28393	25461	0.824
June	160.8	88.52	12.21	78.64	74.91	31749	28553	0.818
July	155.0	76.65	15.39	74.61	70.95	29632	26542	0.801
August	115.5	56.51	14.88	45.60	43.22	17914	15592	0.770
September	65.6	29.72	10.62	21.69	20.39	8341	6765	0.703
October	27.1	17.20	5.84	10.15	9.74	3866	2772	0.615
November	6.3	4.58	1.89	2.62	2.52	909	457	0.392
December	0.0	0.00	0.00	0.00	0.00	0	0	0.000
Year	878.0	435.07	6.14	367.18	348.63	146320	126971	0.779

## 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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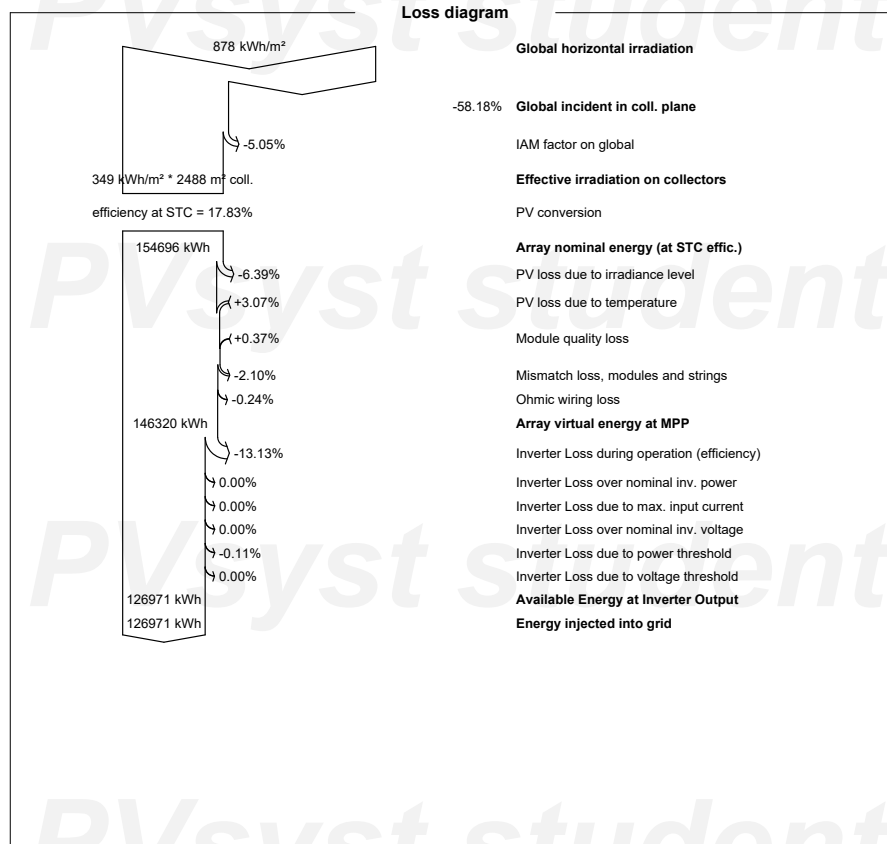
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### Loss diagram





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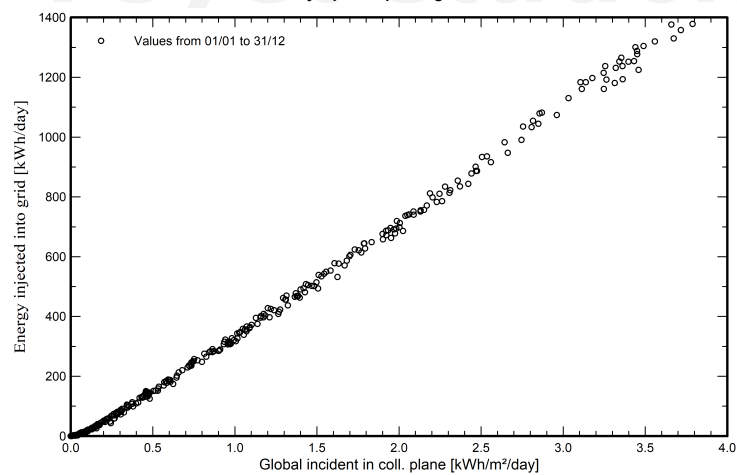
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Predef. graphs

Daily Input/Output diagram



System Output Power Distribution

