

M Pvsyst analyse Nordside 50°



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

Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

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 50 / -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 165780 kWh/year Specific production 373 kWh/kWp/year Perf. Ratio PR 79.36 %

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


PVsyst V7.3.3

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

Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

General parameters
Grid-Connected System

No 3D scene defined, no shadings

PV Field Orientation
Orientation

Fixed plane

Tilt/Azimuth 50 / -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



PVsyst V7.3.3

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

Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

Main results

System Production

Produced Energy

165780 kWh/year

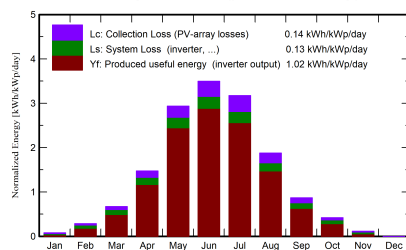
Specific production

373 kWh/kWp/year

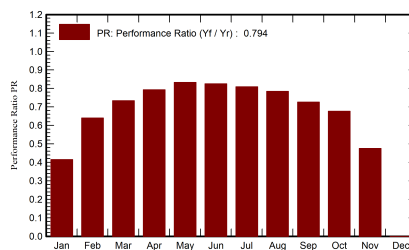
Perf. Ratio PR

79.36 %

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	2.4	2.32	856	442	0.415
February	20.0	10.50	-1.25	8.0	7.71	3146	2265	0.640
March	63.6	25.53	0.74	20.8	19.65	8323	6783	0.733
April	109.3	46.57	4.99	44.2	41.10	17719	15554	0.793
May	150.5	76.10	9.38	91.0	85.62	36923	33666	0.833
June	160.8	88.52	12.21	104.9	98.65	42043	38433	0.825
July	155.0	76.65	15.39	98.4	92.25	38754	35313	0.809
August	115.5	56.51	14.88	58.3	54.56	22807	20279	0.784
September	65.6	29.72	10.62	26.1	24.39	10089	8412	0.726
October	27.1	17.20	5.84	13.0	12.52	5087	3898	0.677
November	6.3	4.58	1.89	3.5	3.37	1272	734	0.475
December	0.0	0.00	0.00	0.0	0.00	0	0	0.000
Year	878.0	435.07	6.14	470.5	442.15	187020	165780	0.794

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



PVsyst V7.3.3

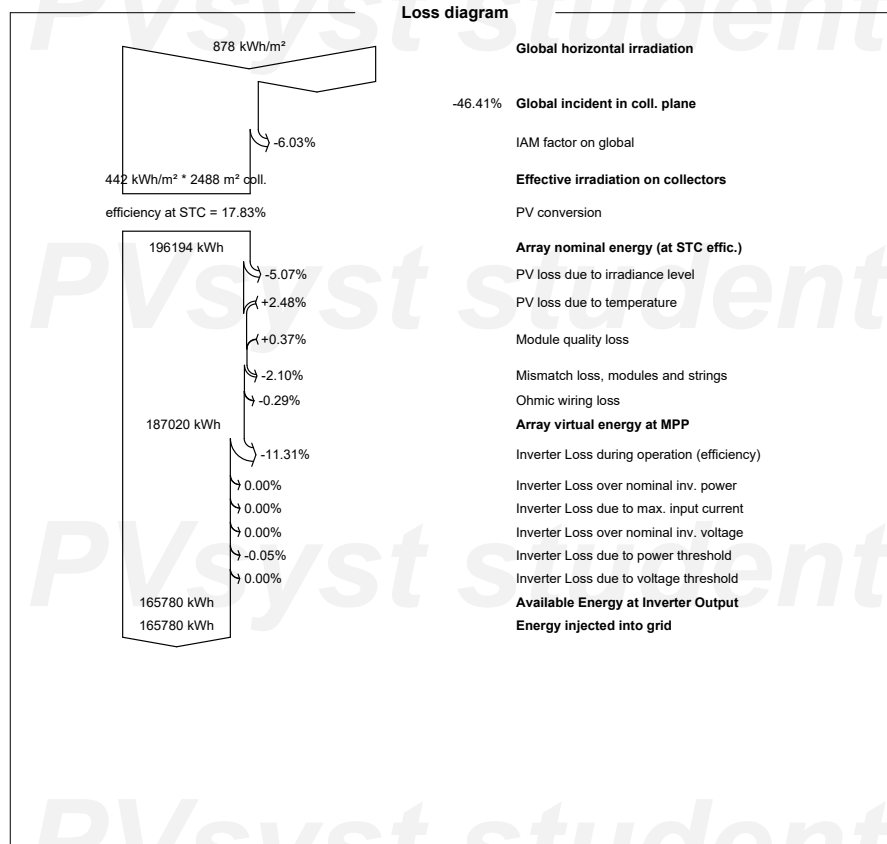
VC0, Simulation date:
12/05/23 14:05
with v7.3.3

Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

Loss diagram





PVsyst V7.3.3

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

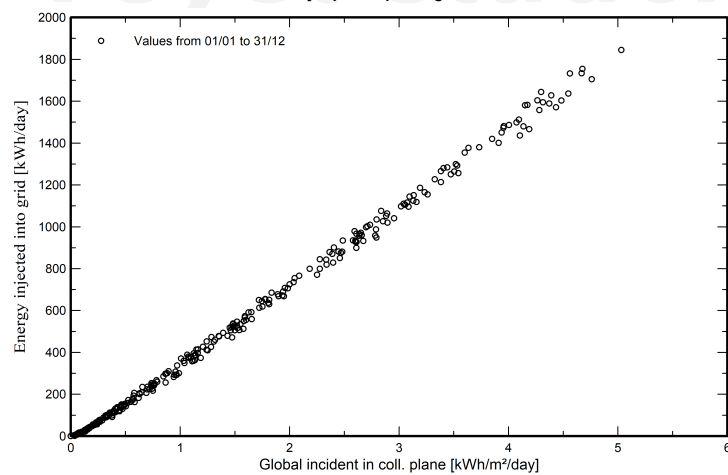
Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

Predef. graphs

Daily Input/Output diagram



System Output Power Distribution

