

## B Pvsyst analyse 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:  
19/04/23 21:34  
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 / 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 425441 kWh/year Specific production 958 kWh/kWp/year Perf. Ratio PR 84.91 %

**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

## B PVSYST ANALYSE 50°



### PVsyst V7.3.3

VC0, Simulation date:  
19/04/23 21:34  
with v7.3.3

### Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

#### General parameters

##### Grid-Connected System

##### PV Field Orientation

Orientation  
Fixed plane  
Tilt/Azimuth 50 / 21.2 °

##### Horizon

Free Horizon

##### No 3D scene defined, no shadings

Sheds configuration  
No 3D scene defined

##### Near Shadings

No Shadings

##### Models used

Transposition Perez  
Diffuse Perez, Meteonorm  
Circumsolar separate

##### 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

##### Module mismatch losses

Loss Fraction 2.0 % at MPP

##### IAM loss factor

Incidence effect (IAM): Fresnel, AR coating, n(glass)=1.526, n(AR)=1.290

##### DC wiring losses

Global array res. 11 mΩ  
Loss Fraction 1.5 % at STC

##### Strings Mismatch loss

Loss Fraction 0.1 %

##### Module Quality Loss

Loss Fraction -0.4 %

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:  
19/04/23 21:34  
with v7.3.3

**Project: Bro**

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

**Main results**
**System Production**

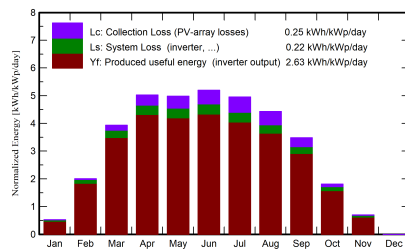
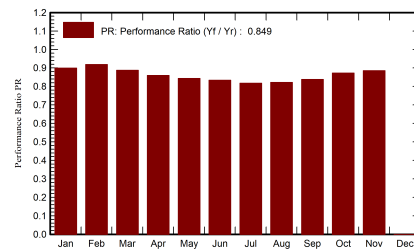
Produced Energy 425441 kWh/year

Specific production

958 kWh/kWp/year

Perf. Ratio PR

84.91 %

**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	16.3	16.1	7153	6507	0.900
February	20.0	10.50	-1.25	56.1	55.3	24610	22879	0.919
March	63.6	25.53	0.74	121.9	120.0	51710	48055	0.888
April	109.3	46.57	4.99	150.9	147.6	62109	57587	0.859
May	150.5	76.10	9.38	154.5	150.6	62679	57846	0.843
June	160.8	88.52	12.21	155.9	151.7	62680	57741	0.834
July	155.0	76.65	15.39	153.7	149.3	60585	55773	0.817
August	115.5	56.51	14.88	137.4	134.1	54421	50184	0.822
September	65.6	29.72	10.62	104.5	102.4	42155	38866	0.838
October	27.1	17.20	5.84	56.1	55.2	23664	21720	0.872
November	6.3	4.58	1.89	21.1	20.8	9089	8284	0.886
December	0.0	0.00	0.00	0.0	0.0	0	0	0.000
Year	878.0	435.07	6.14	1128.5	1103.0	460853	425441	0.849

**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



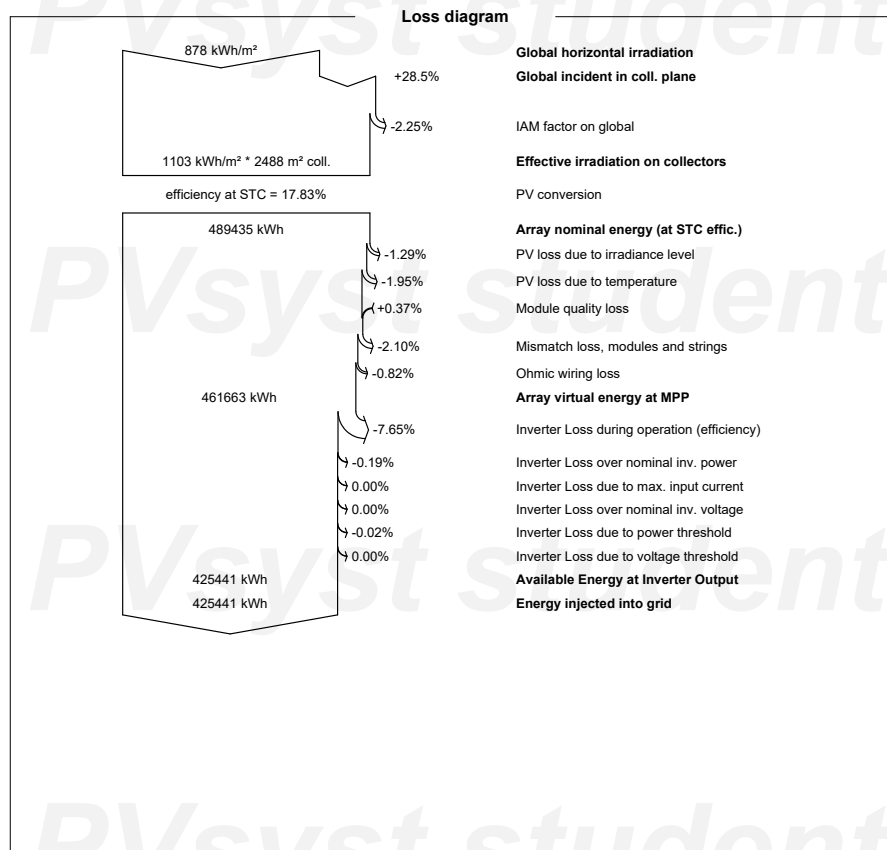
**PVsyst V7.3.3**

VC0, Simulation date:  
19/04/23 21:34  
with v7.3.3

Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)





**PVsyst V7.3.3**

VC0, Simulation date:  
19/04/23 21:34  
with v7.3.3

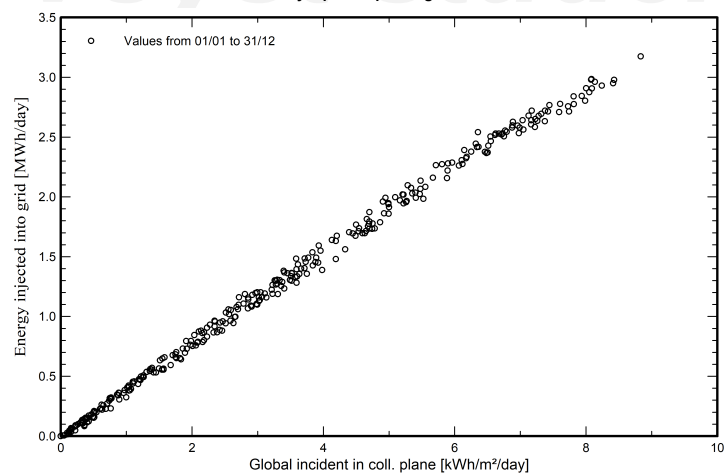
Project: Bro

Variant: New simulation variant

Sveinung Lenes Aga (Norway)

Predef. graphs

Daily Input/Output diagram



System Output Power Distribution

