

PVSYST V6.78	Ove arup partners international ltd (United Kingdom)		09/03/22	Page 1/3
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Grid-Connected System: Simulation parameters

Project :

220309_SWC_15_Panel

Geographical Site

London Wea Center

Country

United Kingdom

Situation

Latitude

51.50° N

Longitude

-0.12° W

Time defined as

Legal Time

Time zone UT

Altitude

77 m

Albedo

0.20

Meteo data:

London Wea Center

Meteonorm 7.2 (1986-2005) - Synthetic

Simulation variant :

16_4_MWh

Simulation date

09/03/22 17h13

Simulation parameters

System type

No 3D scene defined, no shadings

Collector Plane Orientation

Tilt

30°

Azimuth

0°

Models used

Transposition

Perez

Diffuse

Perez, Meteonorm

Horizon

Free Horizon

Near Shadings

No Shadings

User's needs :

Unlimited load (grid)

PV Array Characteristics

PV module

Si-mono

Model

SPR-X21-335

Original PVsyst database

Manufacturer

SunPower

Number of PV modules

In series

7 modules

In parallel

2 strings

Total number of PV modules

Nb. modules

14

Unit Nom. Power

335 Wp

Array global power

Nominal (STC)

4690 Wp

At operating cond.

4342 Wp (50°C)

Array operating characteristics (50°C)

U mpp

380 V

I mpp

11 A

Total area

Module area

22.8 m²

Cell area

20.6 m²

Inverter

Model

4.2 kWac inverter

Original PVsyst database

Manufacturer

Generic

Characteristics

Operating Voltage

125-500 V

Unit Nom. Power

4.20 kWac

Inverter pack

Nb. of inverters

1 units

Total Power

4.2 kWac

Pnom ratio

1.12

PV Array loss factors

Thermal Loss factor

Uc (const)

20.0 W/m²K

Uv (wind)

0.0 W/m²K / m/s

Wiring Ohmic Loss

Global array res.

542 mOhm

Loss Fraction

1.5 % at STC

Module Quality Loss

Loss Fraction

-1.3 %

Module Mismatch Losses

Loss Fraction

1.0 % at MPP

Strings Mismatch loss

Loss Fraction

0.10 %

Incidence effect (IAM): User defined profile

0°	50°	60°	65°	70°	75°	82°	88°	90°
1.000	1.000	0.990	0.970	0.940	0.890	0.770	0.620	0.000

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Grid-Connected System: Main results

Project :

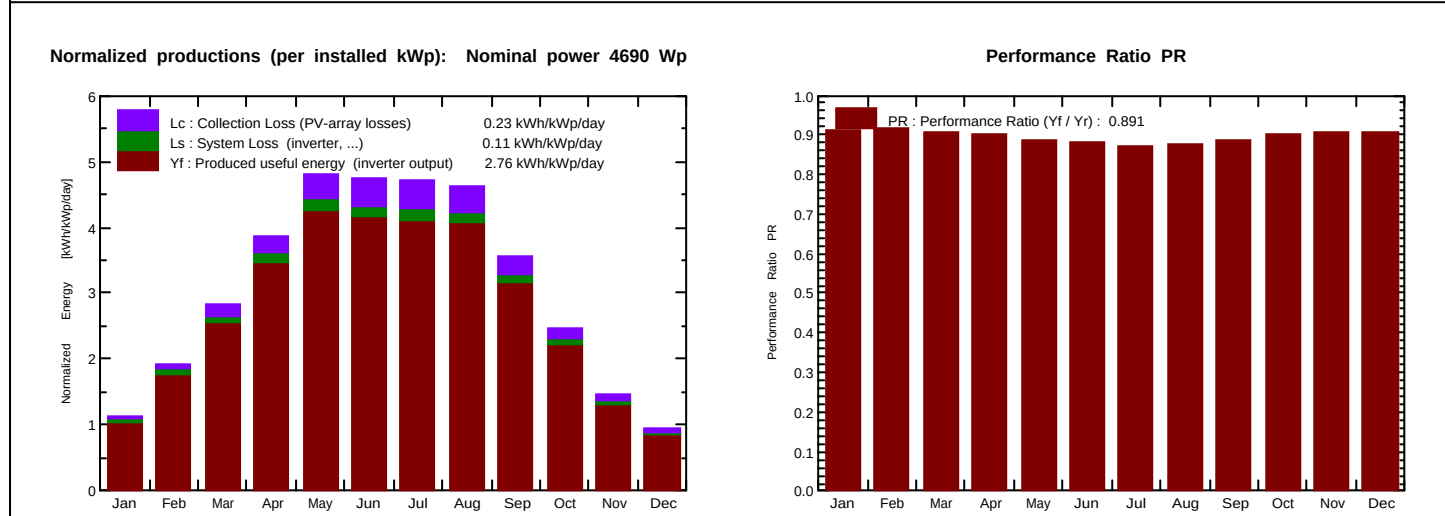
220309_SWC_15_Panel

Simulation variant :

16_4_MWh

Main system parameters		System type	No 3D scene defined, no shadings		
PV Field Orientation		tilt	30°	azimuth	0°
PV modules		Model	SPR-X21-335	Pnom	335 Wp
PV Array		Nb. of modules	14	Pnom total	4690 Wp
Inverter		Model	4.2 kWac inverter	Pnom	4200 W ac
User's needs		Unlimited load (grid)			

Main simulation results					
System Production		Produced Energy	4720 kWh/year	Specific prod.	1006 kWh/kWp/year
		Performance Ratio PR	89.06 %		



16_4_MWh								
Balances and main results								
	GlobHor	DiffHor	T_Amb	GlobInc	GlobEff	EArray	E_Grid	PR
	kWh/m²	kWh/m²	°C	kWh/m²	kWh/m²	kWh	kWh	
January	20.9	13.72	6.20	35.6	35.1	159.9	152.2	0.912
February	35.3	19.52	6.20	54.3	53.6	243.9	233.7	0.918
March	69.6	40.24	7.98	87.6	86.5	387.4	372.1	0.905
April	105.1	62.96	10.54	116.0	114.4	509.1	490.0	0.901
May	143.2	81.80	13.99	148.8	146.7	643.6	620.1	0.888
June	143.5	84.34	17.02	141.9	139.8	608.0	584.8	0.879
July	145.2	77.60	18.73	146.3	144.2	622.8	599.2	0.873
August	130.1	71.44	18.61	143.6	141.6	613.8	591.3	0.878
September	86.7	48.27	15.78	106.9	105.5	461.9	444.6	0.886
October	53.6	31.65	12.60	76.3	75.3	335.7	322.6	0.902
November	26.0	16.52	8.86	43.6	43.1	194.5	185.9	0.909
December	15.9	10.51	6.25	29.2	28.7	130.3	123.8	0.905
Year	975.0	558.58	11.93	1130.1	1114.4	4910.9	4720.3	0.891

Legends:

GlobHor

DiffHor

T_Amb

GlobInc

Horizontal global irradiation

Horizontal diffuse irradiation

Ambient Temperature

Global incident in coll. plane

GlobEff

EArray

E_Grid

PR

Effective Global, corr. for IAM and shadings

Effective energy at the output of the array

Energy injected into grid

Performance Ratio

Grid-Connected System: Loss diagram

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PV Array	Nb. of modules	14	Pnom total 4690 Wp
Inverter	Model	4.2 kWac inverter	Pnom 4200 W ac
User's needs	Unlimited load (grid)		

Loss diagram over the whole year

