Grid-Connected System: Simulation parameters

Project : **BLOO3082 Array C**

Geographical Site	**London / Camden**		Country	**United Kingdom**
Situation	Latitude	51.52° N	Longitude	0.12° W
Time defined as	Legal Time	Time zone UT	Altitude	34 m
	Albedo	0.20		
Meteo data:	**London / Camden**	MeteoNorm 7.1 station - Synthetic		

Simulation variant : **New simulation variant**

Simulation date 06/01/18 13h30

Simulation parameters

Collector Plane Orientation	Tilt	13°	Azimuth	35°
Models used	Transposition	Perez	Diffuse	Perez, Meteonorm
Horizon	Free Horizon			
Near Shadings	No Shadings			

PV Array Characteristics

PV module	Si-mono	Model	**SPR-X20-327-COM**	
Original PVsyst database		Manufacturer	SunPower	
Number of PV modules		In series	10 modules	In parallel 6 strings
Total number of PV modules		Nb. modules	60	Unit Nom. Power 327 Wp
Array global power		Nominal (STC)	**19.62 kWp**	At operating cond. 18.14 kWp (50°C)
Array operating characteristics (50°C)		U mpp	543 V	I mpp 33 A
Total area		Module area	**97.8 m²**	Cell area 88.3 m²

Inverter		Model	**SolarLake 20000TL-PM**	
Original PVsyst database		Manufacturer	Samil Power	
Characteristics		Operating Voltage	440-850 V	Unit Nom. Power 20.0 kWac
Inverter pack		Nb. of inverters	1 units	Total Power 20 kWac

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.	265 mOhm	Loss Fraction	1.5 % at STC
Module Quality Loss			Loss Fraction	1.0 %
Module Mismatch Losses			Loss Fraction	1.0 % at MPP

Incidence effect, user defined profile

0°	50°	60°	65°	70°	75°	82°	88°	90°
1.00	1.00	0.99	0.97	0.94	0.89	0.77	0.62	0.00

User's needs : Unlimited load (grid)

Grid-Connected System: Main results

Project : **BLOO3082 Array C**

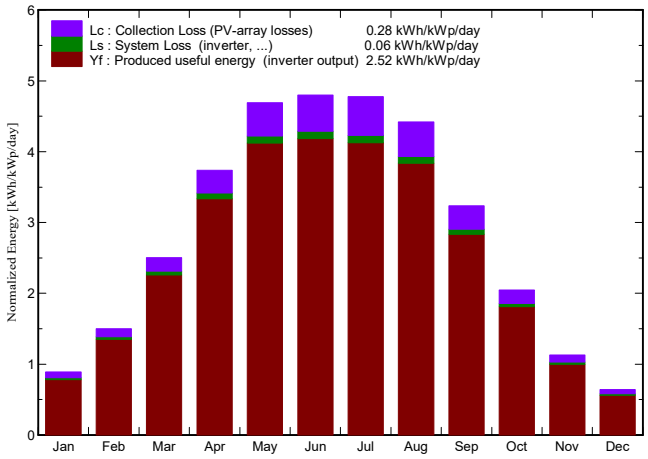
Simulation variant : **New simulation variant**

Main system parameters	System type	**Grid-Connected**			
PV Field Orientation	tilt	13°	azimuth	35°	
PV modules	Model	SPR-X20-327-COM	Pnom	327 Wp	
PV Array	Nb. of modules	60	Pnom total	**19.62 kWp**	
Inverter	Model	SolarLake 20000TL-PM	Pnom	20.00 kW ac	
User's needs	Unlimited load (grid)				

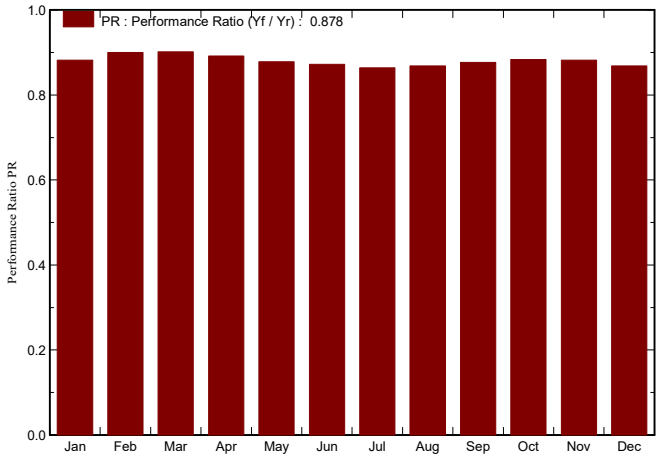
Main simulation results

System Production	**Produced Energy**	**18.07 MWh/year**	Specific prod.	921 kWh/kWp/year
	Performance Ratio PR	87.85 %		

Normalized productions (per installed kWp): Nominal power 19.62 kWp



Performance Ratio PR



New simulation variant
Balances and main results

	GlobHor kWh/m²	T Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray MWh	E_Grid MWh	EffArrR %	EffSysR %
January	20.9	6.71	27.5	26.6	0.493	0.476	18.29	17.68
February	35.3	6.70	42.0	41.0	0.762	0.741	18.56	18.06
March	69.6	8.37	77.6	76.2	1.407	1.373	18.54	18.09
April	105.1	10.93	112.1	110.3	2.010	1.963	18.32	17.89
May	143.2	14.19	145.4	143.0	2.568	2.506	18.05	17.62
June	143.7	17.22	144.0	141.3	2.525	2.465	17.92	17.49
July	145.3	18.93	148.1	145.6	2.573	2.510	17.75	17.32
August	130.2	18.91	137.0	134.7	2.391	2.334	17.84	17.42
September	86.8	16.28	97.0	95.3	1.711	1.669	18.02	17.58
October	53.6	13.10	63.5	62.3	1.131	1.101	18.20	17.72
November	26.1	9.35	33.9	32.9	0.605	0.587	18.24	17.69
December	16.0	6.84	19.9	19.2	0.353	0.340	18.10	17.41
Year	975.8	12.33	1048.2	1028.2	18.529	18.066	18.07	17.62

Legends:

GlobHor	Horizontal global irradiation	EArray	Effective energy at the output of the array
T Amb	Ambient Temperature	E_Grid	Energy injected into grid
GlobInc	Global incident in coll. plane	EffArrR	Effic. Eout array / rough area
GlobEff	Effective Global, corr. for IAM and shadings	EffSysR	Effic. Eout system / rough area

Grid-Connected System: Loss diagram

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User's needs	Unlimited load (grid)				

Loss diagram over the whole year