

PVSYST V6.12										16/12/14		Page 1/3	
Grid-Connected System: Simulation parameters Project : Geographical Site Montemor-o-Novo_Sagim Country Portugal Situation Latitude 38.6°N Longitude 8.2°W Time defined as Legal Time Time zone UT Altitude 241 m Meteo data: Montemor-o-Novo_Sagim Synthetic - Meteonorm 6.1													
Simulation variant : New simulation variant Simulation date 16/12/14 16h58													
Simulation parameters Collector Plane Orientation Tilt 30° Azimuth 0° Models used Transposition Perez Diffuse Measured Horizon Free Horizon Near Shadings No Shadings PV Array Characteristics PV module Si-poly Model REC 245PE Number of PV modules In series 18 modules In parallel 2 strings Total number of PV modules Nb. modules 36 Unit Nom. Power 245 Wp Array global power Nominal (STC) 8.82 kWp At operating cond. 8.02 kWp (50°C) Array operating characteristics (50°C) U mpp 487 V I mpp 16 A Total area Module area 59.4 m² Cell area 52.6 m² Inverter Model Sunny Tripower 8000 TL-20 Characteristics Manufacturer SMA Operating Voltage 330-800 V Unit Nom. Power 8.00 kW AC													
PV Array loss factors Array Soiling Losses Loss Fraction 1.0 % Thermal Loss factor Uc (const) 29.0 W/m²K Uv (wind) 0.0 W/m²K / m/s Wiring Ohmic Loss Global array res. 165 mOhm Loss Fraction 0.5 % at STC Module Quality Loss Loss Fraction -0.8 % Module Mismatch Losses Loss Fraction 1.0 % at MPP Incidence effect, ASHRAE parametrization IAM = 1 - bo (1/cos i - 1) bo Param. 0.05													
System loss factors Wiring Ohmic Loss Wires 20 m 3x6 mm² Loss Fraction 0.4 % at STC													
User's needs : Ext. defined as file Consumos monte.csv													
Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year	
3287	4030	4921	3676	2822	3246	3213	3275	2529	3067	3236	4146	41448	kWh

Grid-Connected System: Main results

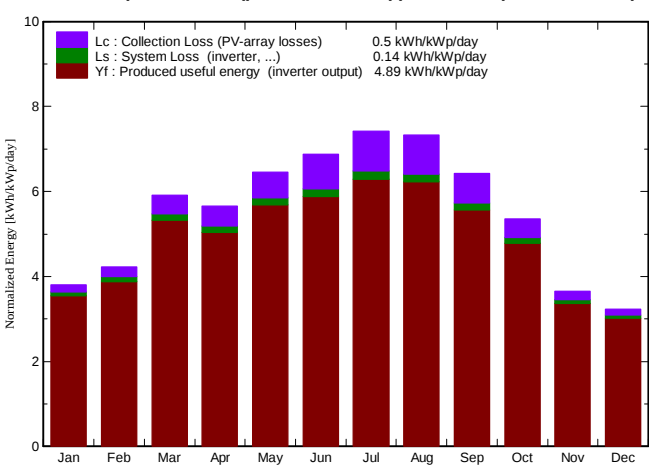
Project : Grid-Connected Project at Montemor-o-Novo_Sagim

Simulation variant : New simulation variant

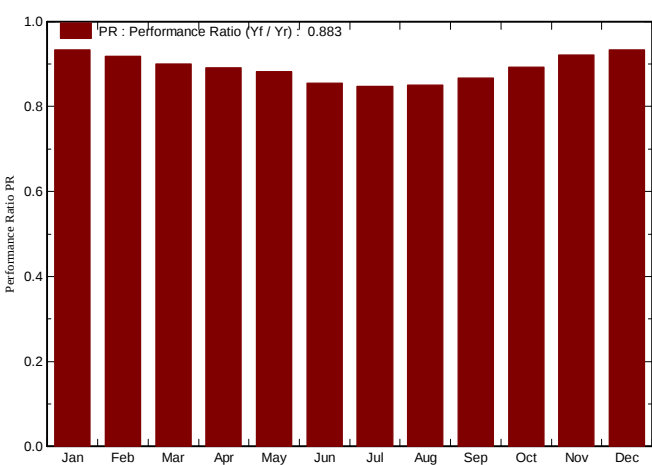
Main system parameters	System type	Grid-Connected		
PV Field Orientation	tilt	30°	azimuth	0°
PV modules	Model	REC 245PE	Pnom	245 Wp
PV Array	Nb. of modules	36	Pnom total	8.82 kWp
Inverter	Model	Sunny Tripower 8000 TL-20P	Pnom	8.00 kW ac
User's needs	Ext. defined as file	Consumos monte.csv	global	41.4 MWh/year

Main simulation results				
System Production	Produced Energy	15.75 MWh/year	Specific prod.	1786 kWh/kWp/year
	Performance Ratio PR	88.3 %	Solar Fraction SF	32.3 %

Normalized productions (per installed kWp): Nominal power 8.82 kWp



Performance Ratio PR



New simulation variant

Balances and main results

	GlobHor	T Amb	GlobInc	GlobEff	EArray	E Load	E User	E_Grid
	kWh/m²	°C	kWh/m²	kWh/m²	MWh	MWh	MWh	MWh
January	73.0	8.94	117.8	113.4	0.997	3.287	0.886	0.085
February	83.5	10.30	118.4	114.0	0.987	4.030	0.930	0.030
March	147.0	13.08	183.5	176.8	1.497	4.921	1.422	0.033
April	157.1	13.98	169.8	162.8	1.375	3.676	1.201	0.135
May	203.4	17.13	199.9	191.2	1.600	2.822	1.134	0.421
June	220.6	21.97	206.2	196.9	1.602	3.246	1.409	0.146
July	239.6	23.73	229.9	220.4	1.771	3.213	1.366	0.353
August	216.3	23.94	227.4	218.5	1.755	3.275	1.392	0.313
September	161.4	21.12	192.8	185.9	1.517	2.529	1.000	0.473
October	119.2	16.98	166.2	160.2	1.344	3.067	1.016	0.292
November	71.3	11.93	109.8	105.6	0.916	3.236	0.803	0.088
December	60.7	9.73	100.2	96.3	0.847	4.146	0.814	0.011
Year	1753.1	16.10	2021.7	1942.0	16.207	41.448	13.371	2.379

Legends:	GlobHor	Horizontal global irradiation	EArray	Effective energy at the output of the array
	T Amb	Ambient Temperature	E Load	Energy need of the user (Load)
	GlobInc	Global incident in coll. plane	E User	Energy supplied to the user
	GlobEff	Effective Global, corr. for IAM and shadings	E_Grid	Energy injected into grid

Grid-Connected System: Loss diagram

Project : Grid-Connected Project at Montemor-o-Novo_Sagim

Simulation variant : New simulation variant

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Loss diagram over the whole year

